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ABSTRACT

A summary of 18 months' investigation into the potential uses of telecommunications in the public interest is presented. Areas investigated include public TV and radio, cable TV, television translaters, instructional fixed television service, satellite communications and interconnections. Public hearings were held in eight cities and more than 100 representatives of telecommunications industries testified. Questionnaires were mailed to all delivery systems operators, and appropriate officials of other states were asked to comment on their telecommunications policies. The committee issued specific legislative recommendations in all areas listed above, sought to define the role of governmental and community agencies, and made suggestions for the use of systems. Appendixes include summaries of appropriate current legislation, maps showing locations of public TV and radio stations in California, a summary of Federal Communications Commission regulations on cable TV, and a report on a satellite technology demonstration. (SK)

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TELECOMMUNICATIONS AND THE PUBLIC INTEREST

Report of

The Joint Committee on Telecommunications

California State Legislature

1972

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TELECOMMUNICATIONS AND THE PUBLIC INTEREST

NEEDS AND PROSPECTS IN CALIFORNIA

REPORT OF THE JOINT COMMITTEE ON TELECOMMUNICATIONS

California Legislature

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November 29, 1974

Honorable John L. Harmer, President
and Members of the Senate

Honorable Leo T. McCarthy, Speaker
and Members or the Assembly

Ladies and Gentlemen:

In accordance with ACR 44 and ACR 209 (1973-74 Session), we transmit herewith the findings and recommendations of the Joint Committee on Telecommunications.

During the course of our study we experienced a surprising demand for copies of the transcripts of our public hearings, indicating a substantial interest in this subject. We hope the report will be widely disseminated and its recommendations implemented.

Respectfully submitted,

JOHN P. QUIMBY
Chairman

FOREWORD

Our signatures below indicate our authorization to file this report of the Joint Committee on Telecommunications with the Senate and Assembly of the California State Legislature as provided by ACR 44 (1973-74 Session). Individual comments of members as to some recommendations are included in the Appendix.

Assembly Members

John P. Quimby
Chairman

Robert C. Cline

Walter Karabian

Senate Members

Mervyn M. Dymally

Arlen Gregorio

PREFACE

The Joint Committee on Telecommunications was created by Concurrent Resolution of the Legislature in June, 1973, and was activated immediately.

In addition to the Committee members whose names appear in the foreword, other legislators who served as members and found it necessary to resign for various reasons were: Senator Fred W. Marler, Jr., (Vice Chairman), Assemblymen John L. Burton and Paul V. Priolo.

The Committee was given until December 30, 1974, to develop public policy in the form of recommendations for appropriate legislation that would maximize the use of telecommunications in the public interest. The areas of investigation included public television and radio, cable television (CATV), television translators, Instructional Television Fixed Service (ITFS), satellite communications, and interconnection. The level of activity in these areas in the State was assessed and a comparison with similar activities in other states was made.

Public hearings were held in eight cities in the State (see Exhibit 1). The hearings were designed to obtain input from the broad range of interests in each community regarding the many aspects of the developing telecommunications enterprise. More than one hundred representatives of public and commercial broadcasting, education, local government, and community agencies testified as did many individual citizens. Transcripts of the

hearings have been widely distributed and the testimony presented therein is an important part of the record.

Questionnaires were mailed to all delivery system operators in the State. All of the states were requested to supply information as to regulation of CATV. Throughout our study we involved as many people as possible in our deliberations, participated in many conferences and public meetings, and sought the advice of professional organizations and agencies interested in the subject.

The Committee formed a Citizens' Advisory Council of thirteen members to help it set guidelines and formulate policies. The Council met several times and made many important contributions during and in between its meetings (see Exhibit 2).

Quite early in its work, it became apparent that the charge given the Committee was too large to deal with effectively in the time available to it. It became necessary to limit the scope of its endeavor and knowingly leave certain areas for further investigation. Major emphasis was given to exploration of delivery systems and recommendations for strengthening those systems so they could become more effective.

The Committee is indebted to many people for their contributions to this effort. We especially thank the Panel on Telecommunications of the Assembly Science and Technology Advisory Council, its Chairman, John J. Guarrera, and the Council staff, Steven J. Larson, Edward H. Stokes, and Barbara Pleake. The Council was investigating cable television and educational television at the time our Committee was beginning its study and we were allowed to participate in their hearings and continued to work with them after their report was released.

We single out for special thanks Margot Shinnamon, who designed the cover for this report, Elizabeth Spaulding, Debbie Davis, and J.W. Pozne[illegible] for their dedicated help.

This report represents eighteen months of concentrated effort. It makes recommendations for action by the Legislature. We hope these recommendations will be pursued and that telecommunications activities will be encouraged to develop in the State in an orderly and economical fashion.

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INTRODUCTION

The Joint Committee on Telecommunications was created in June, 1973, to study current and potential uses of telecommunications systems in California and to suggest ways in which the State can meet present and future needs in these areas.

Although a number of bills in the area of telecommunications have come before the Legislature in the past two decades, no comprehensive plan for the most effective use of all forms of communications technology has been devised. The only ongoing state body in this field is the Television Advisory Committee in the Department of General Services, and that agency's primary activity is to screen requests for federal grants.

One may question why a comprehensive policy is necessary, when the communications industry has proliferated all these years with no involvement from state government. The answer is that developments have occurred in the last twenty years which are likely to alter radically the nature of and uses for mass media.

These developments have been termed a "communications revolution" by Douglass Cater, former communications adviser to Lyndon B. Johnson and now Director of the Aspen Workshop on Communications and Society.

On the educational front alone, Eric Ashby has termed the growth of instructional media part of the "fourth

revolution," the first three being the shift of education from home to school, the adoption of the written word as an educational tool, and the invention of the printing press.

Indeed, there is a rough analogy between the state role in communications now and the role of government in the early days of the automobile or the telephone: during the infancy of those inventions, it was difficult to foresee the many public policy issues they would create.

This "revolution" is made up of several related events. First, there is the growth of relatively new communications technology which by its very existence invites new approaches to the use of telecommunications. Such instruments include cable television, communications satellites, video cassettes, and video discs.

Second, there is a great amount of activity, in this state and across the nation, to realize the full potential of even the more traditional delivery systems. The labor pains of public television in the U.S. are a well-known example.

Third, there is a growing movement throughout many states towards extended postsecondary education, which, in providing the opportunity for higher education to those for whom traditional academic work is not possible, may make use of all the delivery systems previously mentioned.

There is already activity at the federal level in the sphere we are discussing, exemplified by the political and financial tribulations of public broadcasting and the continuing debate over FCC cable regulation. More relevant

for California, the communications revolution has already begun in this state, although this fact seems to have drawn less attention here than in many other states. The following is but some of the evidence of efforts and needs that currently exist:

● Testimony collected by this committee in the course of eight public hearings held throughout the state brought out the progress and problems of leaders in higher education in using telecommunications to reach out to a larger segment of the population than is now possible. The public demand for such services is difficult to express in precise figures; it is hard to assess interest in services which now only exist on a limited scale. We do know that in 1973-74, 1.2 million people enrolled in adult education classes administered by the State Department of Education through the unified school districts. Another 104,000 enrolled in similar classes administered by the community colleges, and 375,000 enrolled in the University of California Extension classes during the same year. A recent survey indicated that over 60,000 people, most of whom were full-time professionals, are interested in external degree programs, and that a substantial portion of these people preferred courses through television and home study. It seems apparent that if significant educational services existed, employing telecommunications for delivery, a substantial number of people would take advantage of such services.

Nontraditional education, in which television and radio

play an important part, is being tried with success in several other states and in England. It is already being explored by the University of California, by the State University and Colleges, and by community college systems in California. The latter two have formed consortia for developing instructional programs and have already presented several telecourses. Twenty-two course offerings presented by the Southern California Consortium, composed of thirty-two community colleges, have drawn an enrollment of 72,400 students from fall, 1970, through fall, 1974. All courses offered throughout the State from summer, 1973, through spring, 1974, (three semesters) had a total initial enrollment of 36,084. Both these figures are for those who took the course for credit. The number of study guides sold indicate that many more people were viewing the courses regularly on a non-credit basis.

In response to such indications of public interest, the Legislature's Joint Committee on Postsecondary Education has contracted for a feasibility study of the open university in California.

● California now contains the nation's largest number of cable subscribers, the largest number of CATV systems engaged in local production activities, and over one-third of the country's twenty-five largest systems. Although several bills have been presented over the years on the subject of CATV, thus far no decision has been reached as to the State's position in this area.

● Public broadcasting took root in California over 30 years ago and has enjoyed its major growth, including the inception of public television, over the past 20 years. "Public broadcasting" admits of many definitions, and perhaps one of the strengths of the public broadcasting system is that it has adapted a flexible definition of its own purpose. For this reason, public broadcasting in this state has provided a variety of services which could not be supplied, due to the nature of financing, by commercial television. One of the guiding principles behind public broadcasting has been to build an institution which is not constrained for economic reasons to maximize its audience, and thereby enable it to serve a variety of more specialized audiences. This objective is being fulfilled in this state, despite a perpetual struggle on the part of public broadcasting stations, particularly the smaller ones, to make ends meet. Yet California is one of the few states with a thriving public broadcasting enterprise which has neither directly supported that enterprise nor looked to it as a major and important resource (with the exception of one station licensed to a state university).

It would be an exaggeration to say that the survival of public television here depends on state support; but it is fair to say that such support could make possible a quantum jump in terms of innovative community programming.

The above examples will be amplified in the course of this report. They are indicative of the overall fact that

there is a potential and pertinent use for telecommunications in meeting statewide needs. It is this committee's position that much of this unrealized potential can most efficiently be realized through support and coordination from the state level, and that by providing such support the State can, symbiotically, more efficiently carry out its mandated responsibilities, particularly in the area of education.

To render the subject manageable in the time allotted to this committee, we have concentrated on those media which can provide important public services to the greatest number of Californians, and we have limited our attention to those delivery systems for which new uses are still possible. This limitation precludes frequencies allocated to commercial broadcasters and frequencies reserved for private communications, such as emergency services -- separate and important topics in themselves.

Our chief interest is in the educational potential of television and radio, defining as "educational" those services -- instructional, public affairs, and cultural -- intended primarily to increase public awareness and to provide a learning experience rather than solely to entertain. In its ability to provide useful information to the individual citizen lies the greatest, yet least developed, potential of telecommunications technology. It is the Committee's position that this function of mass communications should take top priority in future state telecommunications policy.

The aim of our research has been to describe the

potentials inherent in various delivery systems and to link those systems with specific state needs. It has been impossible, however, to remain strictly hardware specialists: technological advances have always created new visions by placing new tools in our hands and have thereby effected substantive social changes. Telecommuications policy is closely tied to educational and administrative issues, and we have made some recommendations in these areas also.

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SUMMARY AND RECOMMENDATIONS

I. PUBLIC TELEVISION

There are 12 noncommercial public television stations in California which can be received by nearly 19 million California residents. Present plans for new stations will add some audience to that total but several populated areas will still be unable to get public television except via CATV, notably parts of Santa Barbara and San Luis Obispo Counties.

Public television stations' service falls into three major categories: national programs distributed via PBS; instructional programming for K-12 classroom use; locally-produced public affairs and community programming.

Long-term, stable funding has plagued noncommercial television since its beginnings. In spite of the insecure base on which the California public television enterprise rests, it has built a system whose capital worth is approaching $20 million and whose annual operating income is about $15 million. California is second only to New York in the size of its operation.

In the matter of direct state support for public television, California ranks 45th among all states in terms of direct revenues contributed, providing only 2% of the annual total. The State's per capita expenditure is 1.2¢ per person. Of the 48 contiguous states, the one providing the most on a per capita basis is Nebraska with $1.64 per person. The

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state supporting public television at the highest level in terms of total support is Wisconsin.

There are substantial disparities in the economic well-being of individual stations in the state. Stations serving large urban populations have access to many rich program resources and a relatively prosperous base from which to draw support. Smaller-market stations, which should be able to serve their audiences with equally significant programming, are more dependent on viewer support and their base is so diffused that their very existence is continuously threatened.

Public television is viewed as a communications instrument directly responsive to community needs. It is, at once, a community forum and a dynamic service to all citizens. Many states have recognized the importance of the enterprise and have created strong public television commissions to administer state support for their stations. They define "educational broadcasting" to include programming that raises living and educational standards of all citizens and residents.

The Committee recommends the creation of an independent state agency that will insure the orderly growth and fullest use of television to serve the public intent.

II. PUBLIC RADIO

Public radio in California is very much alive, but suffering from lack of attention. Public television has captured most of the emphasis and, as a result, radio's

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potential is largely unrealized. Of the 56 noncommercial public radio stations operating in the State, only a few are programming in the public interest.

A trend toward a proliferation of low-power stations is emerging. If the trend continues, it is possible that further development of public-interest oriented stations may be seriously curtailed. A statewide plan is needed to place before the F.C.C. a request that the table of allocations for noncommercial FM radio be re-examined at an early date.

Radio can be a vehicle to bring instructional and public interest programming to large audiences at a low cost per consumer. A test of this hypothesis through a carefully designed pilot program is recommended.

III. TELEVISION BROADCAST TRANSLATOR STATIONS

A simple and low-cost method of extending public television stations' services to areas that do not have direct reception of such stations is via Television Broadcast Translator Stations. These low-power stations pick up and re-broadcast the signal of broadcast stations to specified communities. Thirty-seven translators now re-broadcast the signals of six of the public television stations in California.

Some ten percent of the state population will be without public television reception, even after two projected new stations come on the air. Translators would be an econom-

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ical means of serving that population.

While the State cannot license translators, it should include them in its consideration of delivery systems needed to extend public and instructional broadcast services throughout the State.

IV. INSTRUCTIONAL TELEVISION FIXED SERVICE (ITFS)

Instructional television fixed service is a delivery system of particular significance at the elementary and secondary level of public education. The service also has implications for the postsecondary level which are somewhat less significant than at the lower grade levels, but the difference is only that a comparatively smaller student population can be served.

ITFS is an open circuit broadcast system requiring special receiving equipment that limits its use by the general public. It is designed to deliver program materials from a central point to properly equipped classrooms and learning centers. It can provide "upstream" aural communications from the student to the teacher. By comparison with public broadcast television, ITFS is a low-cost means of delivering instructional materials to defined audiences.

Only a limited number of ITFS channels are available in any given area. The Committee discovered that some channels are being used for purposes for which they are not intended, thereby possibly foreclosing their use for large audiences.

The Committee recommends that further development of

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ITFS be encouraged and coordinated to protect the resource and to realize the benefits of a low-cost delivery system.

V. CABLE TELEVISION (CATV)

Cable television is one of several kinds of delivery systems available to us. Its usefulness will depend on how many people it eventually will reach. At present it reaches only about a sixth of the state population and its growth and the factors that will contribute to that growth cannot be predicted. The number of cable subscribers is limited largely because of restrictive regulation imposed by the F.C.C.

Cable television can provide many more channels and many more specialized services than the more traditional delivery systems. Included in these services are the "upstream" channels that permit users to respond to producers. In addition, federal regulation reserves channels for use by the public, local governments, and educational agencies.

Cable television's potential is not clearly understood by those who might make the most effective use of the medium. Without that understanding, and because there are limited resources to take advantage of it, little is being done by public agencies to use CATV.

As the CATV enterprise grows it will demand more and more program material. Production expertise and adequate financing are not presently available, and very little

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planning is underway to provide the materials to meet the demand.

While there is substantial uniformity in local franchise requirements, local governments are often not able to enforce their own regulations. As a consequence, the public is the loser when it is given limited or undependable service.

It is important to note that the Committee does not advocate state-level regulation of CATV at this time. To do so would only introduce the possibility of further restriction on the industry from a third tier of government. However, we do feel that CATV is an important communications resource and, further, new federal policy may impinge on state authority, a possibility that should be watched closely.

On the basis of the foregoing considerations, the Committee sees the following as immediate tasks to be undertaken by an appropriate state body that the Legislature should establish. Specific proposed legislation to create such an agency is included in this report. The agency's functions would be, among others:

- To define and further the use of CATV in a state educational network.
- To provide a mechanism to support the development of new cable services, including programming, while avoiding any control over program content.

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- To create an office of liaison with the F.C.C. and other federal communications policy bodies in order to protect state interests and to represent the State in the framing of federal policy.
- To provide assistance to local communities in their enforcement of franchise requirements.
- To keep informed of the growth of the cable industry in California and of the possible need for regulation once the system has reached maturity.

VI. INTERCONNECTION

Public television and radio stations, ITFS and CATV systems, as well as a number of educational agencies in the State, have declared their need to be interconnected to share production capabilities and better serve their audiences with programs of statewide interest.

"Interconnection" means a system that will electronically tie broadcast stations, colleges, universities, public agencies and/or regional instructional television organizations together and provide them with instantaneous access to programs originating from a central source. While it is a network, it differs from the traditional definition in that program content is determined by the agencies that use the system, not the agency that operates it. It will increase the variety of programming available to all. The resources of all production centers will be shared. It will produce significant cost-effective benefits as its use increases.

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Several possible methods of interconnection should be considered. However, before any method is adopted, precise engineering information is needed. The need for interconnection is evident and, since the potential users represent a variety of interests, the State should provide the service.

The Committee recommends that a full engineering study to design a statewide interconnection service be commissioned at an early date.

VII. SATELLITE COMMUNICATIONS

Early experience with a communications satellite serving public school districts in eight states of the Rocky Mountain region is demonstrating that it is possible to provide a dependable service of high quality. The project is also providing a model of cooperative management of a delivery system by a large number of independent authorities in a wide area.

While the present project is very costly, being a pilot effort to which all research and development costs are attributed, there is reason to assume that over time, as more such satellites are replicated, distribution in this mode will show cost-effective benefits.

The ATS-6 satellite being used in the present experiment is scheduled for service to India starting in May, 1975, for a period of one year. There are no set plans for use of the bird after that. An opportunity exists to develop a project using ATS-6 for a time starting in 1977. The Committee

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feels that California has a unique opportunity to learn much about the benefits that may accrue from the use of space communications in its developing delivery systems.

We recommend that the Legislature establish immediate contact with NASA, H.E.W., private foundations, domestic satellite developers, and adjoining states to explore the possibility of designing a satellite project using ATS-6 after its experimental period in India. The lead-time required to design such a project is substantial, so early action is indicated.

VIII. GOVERNMENTAL AND COMMUNITY AGENCIES

Governmental agencies concerned with manpower development, personnel in-service training, public education in crime prevention, social welfare and other programs, as well as a number of community agencies, are unaware of the potential of public communications as a vehicle for public education. For the most part, they think of public relations when television and radio are mentioned.

While the Committee did not explore this area in detail, it believes the impact on social and public issues would be substantially greater if these agencies made effective use of public communications. The libraries are among the few agencies that recognize the possibilities that access to public communications distribution systems will afford, and they are doing something about it.

The Committee recommends that an informational program be developed to acquaint the agencies with the potential of

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the media.

IX. USING THE DELIVERY SYSTEMS

Higher education is in the process of radical change in the United States, caused mostly by an increasing demand for nontraditional studies. It has been estimated that by 1975 the learning force outside traditional programs in California will number between nine and eleven million adults.

Telecommunications will be a key ingredient in providing postsecondary services to this adult population. Development of telecommunications for this purpose must be part of a larger plan for open learning in California. Successful models for open learning through telecommunications exist in England and in other states. Some notable efforts are also occurring in parts of California, and planners in higher education are interested in creating a plan statewide in scope.

State leadership is necessary to provide overall coordination in the creation of an open learning system in California. Regional production centers for telecourses, a comprehensive curriculum plan, and decisions about administrative structure are a few of the eventual needs.

State leadership also means initial funding, which will require a large capital outlay. It is reasonable to expect, however, that such a project will become self-sustaining after a few years of operation.

PUBLIC TELEVISION

The first public television station in California to operate on a continuing basis, KQED in San Francisco, was established in 1954. Since then the total number of non-commercial television stations in California has grown to 12, 11 of which are affiliated with PBS and qualified for CPB support:

Station	Location	Licensee
KQED Channel 9 (1954)	San Francisco	KQED, Inc. (non-profit corporation)
KVIE Channel 6 (1959)	Sacramento	Central California ETV (non-profit corporation)
KVCR Channel 24 (1962)	San Bernardino	San Bernardino Community College District
KCET Channel 28 (1964)	Los Angeles	Community Television of Southern California (non-profit corporation)
KIXE Channel 9 (1964)	Redding	Northern California ETV Association, Inc. (non-profit corporation)
KCSM Channel 14 (1964)	San Mateo	San Mateo Community College District
KTEH Channel 54 (1964)	San Jose	Board of Education, County of Santa Clara
KPBS Channel 15 (1967)	San Diego	San Diego State University
KEET Channel 13 (1969)	Eureka	Redwood Empire ETV, Inc. (non-profit corporation)
KOCE Channel 50 (1972)	Huntington Beach	Board of Trustees, Coast Community College District

Station	Location	Licensee
KLCS Channel 58 (1973)	Los Angeles	Los Angeles Unified School District
KVST Channel 68* (1974)	Los Angeles	Viewer Sponsored Television Foundation (non-profit corporation)

*not affiliated with PBS

The coverage pattern of the combined stations is depicted in Exhibit 3. The use of translators enables some of the stations to extend their services to regions outside the normal range of reception, particularly in Northern California. Even so, there are still some fairly populated areas not yet served by public television, notably the Central Valley. Other areas, such as parts of Santa Barbara and San Luis Obispo Counties, are able to receive public television only via CATV. Pending applications for new stations in Fresno, Tulare, and Salinas may eventually solve some coverage problems, although some communities will still be beyond reach unless additional translators are installed.

Roughly 18.8 million California residents can now receive public broadcasting, probably the largest state audience in the nation. The audience served by each station, as reported by the stations in a survey conducted by this committee, is as follows (stations in parentheses fall within the coverage of the stations they follow):

KCET, Los Angeles (KLCS,KOCE,KVST)	9,456,500
KQED, San Francisco (KCSM,KTEH)	5,000,000
KPBS, San Diego	1,947,100
KVIE, Sacramento	1,800,000
KIXE, Redding	350,000
KEET, Eureka	188,100
KVCR, San Bernardino	106,869
	18,848,569

Services provided by the state's public television stations vary according to the primary mission of each station's licensee. Generally speaking, the programming falls into a few large categories:

--National programs distributed over the PBS Network. These include such productions as Sesame Street, The Electric Company, Washington Week in Review, and many others. National programming has also been used to impart health care information with such shows as The Killers or VD Blues. Several California stations, after broadcasting these programs, produced follow-up discussions by local public health officials. How much network programming is used each day is determined by the station. The stations with the financial capability for extensive local programming may use PBS material less, while smaller stations may rely on it more.

--Instructional programming for K-12 classroom use. Almost every PBS-affiliated station in California maintains a full daytime instructional programming schedule during the 30 weeks the schools are in session. Some of this material is locally produced, but the bulk of it is acquired from large video libraries, such as National Instructional

Television or Great Plains Instructional Television Library. The state's newest PBS station, KLCS in Los Angeles, was established to provide primarily K-12 instructional programs to the Los Angeles city schools.

In addition to K-12 programming, there is extensive airing of college-level telecourses. For instance, KOCE in Huntington Beach has produced six such courses, which have drawn a total enrollment of about 12,000 students during three semesters. The acme of the station's efforts to date is a 30-part series in anthropology called "Dimensions in Culture," filmed in 35 countries and containing commentary from some of the world's most renowned anthropologists. The series was made for $750,000, supplied partially by a National Endowment for the Humanities grant. Over 1,000 Orange County residents enrolled for the first presentation of the course. "Dimensions of Culture" is the most flamboyant but certainly not the only effort of its kind throughout the state. From June, 1973, through June, 1974, the 11 stations carried a total of about 72 post-secondary telecourses, representing a total of 1,769 separate programs, not including repeats.

--Locally-produced public affairs and community programming. This is the kind of programming most affected by limited funding, and consequently the larger, more prosperous, urban stations are the state's leaders in this area. KQED, San Francisco, produces a full-time, fully-staffed complete daily newscast, and their news coverage has been proclaimed

as among the best in the industry. Station KCET, Los Angeles, won the DuPont Award for a series focusing on the Black and Chicano communities in Los Angeles; it also received a Television Academy Award for the best single news program in Los Angeles for a production entitled L.A. Collective. Even a smaller station, such as KEET in Eureka has produced some 200 hours of community programming since its inception and has provided a free public forum for the discussion of community issues such as water fluoridation and forest conservation.

Such are just a few of the services provided by public television. The above examples are far from exhaustive and omit, for the sake of brevity, unique and important contributions made by each of the PTV stations throughout the state. All told, the 11 PBS affiliates, during a typical week in December, 1974, broadcast 1016 hours, compared to 886 hours for a similar week the year before. The stations currently represent the most viable delivery system for statewide educational programming as well as all other types of public interest programming.

Funding

In spite of the many successes achieved by public television, the need for long-term, stable funding has plagued the enterprise since its beginnings. The first federal commitment to public television came with the Public Broadcasting Act of 1967. For all the progress made since, there

is unanimous agreement within the industry that the institution is still in its infancy and that the visions of its designers, such as the members of the Carnegie Commission, have been hobbled by political and financial difficulties. As John Macy, Jr., former President of the Corporation for Public Broadcasting, wrote in To Irrigate a Wasteland, "The failure to achieve stable, massive, and long-term revenues from a variety of sources has retarded the growth of program services of high quality, innovative content, and broad diversity."

Public television in California has moved ahead despite the funding problem to which Macy alludes. The total capital outlay for nine stations, from their inception through June 30, 1973, amounts to $17.4 million. (This figure was also compiled from answers to the committee survey; not all of the stations answered every question.) During fiscal year 1973, the eleven stations took in about $15 million, according to figures collected by CPB, ranking them second in the nation behind New York's $26 million. The CPB survey presents this picture of funding sources for California stations:

Local Departments of Education	$ 3,309,883	22%
Local Government Agencies	442,104	3%
State Department of Education	7,172	--
State Government	19,734	--
State Colleges and Universities	238,549	2%
All Other Sources	10,913,970*	73%
	$14,931,412	

*"All Other Sources" breaks down as follows:

Federal		
HEW Facilities Grants	$ 756,283	7%
Other	33,967	--
Public Broadcasting Agencies		
CPB Community Service Grants	273,498	3%
CPB Miscellaneous Grants	1,149,282	11%
Other	642,849	6%
Other Colleges	65,295	1%
National Foundations	2,250,102	21%
Local and Regional Foundations	94,637	1%
Auctions	1,044,342	10%
Subscribers and Individual Contributions	2,952,811	28%
Business and Industry	705,164	7%
All Other	589,119	5%
	$10,557,349*	

*Totals in this category differ since the first is from information supplied by 11 stations while only eight stations provided more detailed information.

A few observations emerge from these figures. First, California's stations are distinctive among the states in that they depend heavily, especially for having the second largest income in the country, upon voluntary contributions and fund-raising activities--the least dependable and most unpredictable sources of income. Almost 35 percent of the state's PTV revenues come from such sources.

Second, the $15 million statewide figure conceals disparities in the economic well-being of individual stations. Station KCET in Los Angeles has an annual budget of $5.8 million, according to the public testimony of KCET General Manager, Dr. James Loper. Almost $1 million of the budget comes from fund-raising events, another $1.3 million from contributions by 67,000 subscribers, and substantial portions from over 700 businesses in the area. The remainder comes from federal and Ford Foundation grants and from production

contracts, KCET being one of four major producers of nationally-distributed PBS programming. Likewise, KQED, with a budget slightly less than KCET's, boasts about 75,000 subscribers and runs a very profitable annual auction.

Stations KCET and KQED obviously have large and prosperous urban populations supporting them. By contrast, stations KIXE, Redding, and KEET, Eureka, exemplify the plight of smaller-market stations which depend on viewer support. At a public hearing in Redding, the KIXE Station Manager presented income figures for fiscal year 1972: $22,000 from memberships, $37,000 from an auction, $34,000 from school contracts, $15,000 from assorted fund-raisers, and $25,800 from a CPB community service grant. A local commercial channel supplied the equivalent of $110,000 by allowing KIXE to share a transmitter site.

With no mobile units and a paid staff of four and one half people, KIXE has managed to produce five low-budget local programs and meet a full daily ITV schedule for 30 weeks each year. It also produced a three-hour program on State Proposition One in conjunction with Chico State University and Shasta College. The Station Manager admits that KIXE would not have survived without federal and Ford Foundation help, despite strong community support.

The Eureka station is in a similar situation. The estimated 1973-74 budget was $16,500 from the annual auction, $50,000 from CPB, $40,000 in donated services, $13,000 from the network, about $14,500 in school money, and some money

from local industry. These projections were made by station officials at a public hearing in Eureka.

Both the above stations barely meet their budgets each year. Yet together they are responsible for about one-fourth of the State's geographical area. They are two of six smaller to medium-sized stations in the State--the other four being Sacramento, San Mateo, San Jose, and San Bernardino--which together serve a potential audience of 7,000,000 people. Their yearly operational budgets ranged from $76,000 to $348,000 in fiscal year 1972. So far as the priority of needs is concerned, most of them are still trying to attain adequate staff and basic equipment.

The larger stations, though comparatively more well-endowed than the smaller ones, also have unmet needs because of the demand to provide a variety of different services in keeping with the size and diversity of their viewing audiences. By virtue of the fact that they are more established, the larger stations may receive the lowest priority in the granting of limited federal funds. The General Manager of KQED pointed out in a public hearing that in 1974 the public television and radio stations in California submitted 12 grant requests, totalling $2.8 million, for HEW money, of which there was about $935,000 available. Three grants were approved totalling a little more than $536,000. Of the total, $476,000 went to two of the smaller and medium-sized stations, and a little more than $60,000 went to one radio station.

Given the nature of public television funding, meeting an annual budget is a hand-to-mouth affair in California, always involving a number of tentative factors and always requiring a preponderance of human time and energy available at the station--energy which could be devoted to creating more innovative programs for the community, were funding a more secure process.

The dimension of subscriber support in this state indicates that public television is serving the needs of a large segment of the population. Unfortunately, not all the individuals and institutions which use the services of PTV contribute to it. As one station manager put it, "If everyone who used Sesame Street contributed to the station, we'd have no problem." The situation is similar with respect to institutional contracts. The KQED General Manager claimed that station has contracts with only 70 school districts, although the station's coverage extends to twenty counties; he suspects that more schools use the programming than pay for it.

One untapped funding source for California's PTV stations is direct state support, and during several of this committee's public hearings, leaders in the industry cited the need for more state money. The broadcasters' pleas may be justifiably more strident here than elsewhere, for California holds an extremely low ranking among state governments as a supporter of public television, a position incommensurate with the coverage and achievements of its

public television enterprise. In fiscal year 1973, our state PBS stations received only 2% of their annual revenues from state sources, ranking California 45th among the states in terms of direct revenues contributed. In terms of total expenditure on public television, California ranks 38th ($265,000 for fiscal year 1973), and 39th in per capita expenditure (1.2¢ per person for fiscal year 1973). (See Exhibit 4)

Among the stations, only one, KPBS, receives any money from the budget of a state agency, by virtue of being licensed to San Diego State University. The original agreement drafted in 1967 called for the State to contribute 50 percent of the station's annual budget. From 1970 to the present, however, that state appropriation was consistently reduced by the Administration, such that in fiscal year 1974, the non-state operating funds almost tripled the State's contribution of $237,000, a figure insufficient for even the salaries of station personnel.

The only other sources of state money are the indirect subsidies provided by the Farr-Quimby Instructional Television Act (Education Code Sections 6441, 6442, 6443, and 18270) and by Section 11251 of the Education Code (AB 1171, Fong), which reimburse K-12 school districts and community college districts respectively, for a portion of the money spent in using instructional television, including the creation of software.

While each of these laws is a step in the right direc-

tion, neither is considered close to sufficient by the public broadcasters. The Station Manager of KTEH, San Jose, recommended in public testimony that money earmarked for instructional television must be substantially increased: "...don't expect ITV to pull off any major miracles unless a way is found to support ITV to this extent." The Station Manager of KIXE attested that, at an average hourly rate of $75 to run the station, not including depreciation and overhead, it cost him about $50,000 in 1972 to provide ITV service, while he took in only about $34,000. Moreover, support by educational institutions for instructional services has often suffered from conflicting demands for limited school money. Income from ITV contracts has decreased at KQED, for example, from about $250,000 in 1967-68 to a projected $150,000 in 1973-74, according to the station's Manager.

Solutions in Other States

The top 15 supporters of educational broadcasting among the states, ranked in order, are:

1. Wisconsin
2. Maryland
3. New Jersey
4. New York
5. Georgia
6. Michigan
7. South Carolina
8. Ohio
9. Nebraska
10. Kentucky
11. Mississippi
12. Pennsylvania
13. Alabama
14. Florida
15. West Virginia*

*List is based on financial data for fiscal year 1972, collected by CPB. It includes appropriations from state educational institutions as well as direct grants.

Of these 15 states, nine have created strong public television commissions with the statutory power to own and operate PTV stations, although not all of them do. Two of the states have special commissions with narrower powers than the previous nine. Two, Florida and Georgia, place state jurisdiction for educational broadcasting under the State Board of Education. In New York, the Board of Regents charters educational broadcasting stations, and in Michigan the University of Michigan has the responsibility.

Eight of the above 15 states are the licensees for all their public broadcasting stations, either directly or through the state university system. In many of these cases, public television was from the beginning part of the state's effort to rapidly upgrade the level of educational services. For various reasons these states do not provide useful models for the situation in California.

Some of the strong supporters of public broadcasting, however, have a public television system structured much like California's with strong local autonomy and a variety of licensees. Ohio, Pennsylvania, New York, and Florida are good examples.

By and large, the definition of "educational broadcasting" is very broad among state commissions. Ohio defines it as the "television programs which serve the educational needs of the community." Even in Florida, where state public broadcasting funds are administered by

the Department of Education, educational broadcasting is defined as that which "raises living and educational standards of the citizens and residents of the state." In many of the states, financial support goes for a variety of purposes although the authority for strictly instructional programming may be reserved for the Board of Education or similar educational authority.

The Needs in California

The State of California's responsibility for the support of educational broadcasting is not a new issue. A history of the State's efforts in this area and detailed recommendations pertaining to public television today are presented elsewhere in the report.

Suffice it to say that the tax dollars going directly into public television at this point is disproportionately meager by any standard. It is difficult to generalize about the needs of the industry on a statewide basis, because the priority of needs varies so greatly from station to station. One vacuum in the services provided by public television is the lack of any extensive coverage of state government, which is an expensive undertaking made more difficult by the lack of a statewide interconnection. This is just one example among many, however. The smaller stations need money for enough staff and equipment to cover their immediate communities. In addition to the strictly instructional services provided by public stations, there is the vision of a communications

instrument directly responsive to community needs.

Ms. Pauline Abbe, Northern California ETV Association President, described her sense of her own mission,

> A community owned public television station should become a community forum to draw people together in common concerns, a sort of nine-county 'town meeting'. The Watergate Hearings have established two of my strong beliefs: that the public's business should take place in public, and that democracy in action is one of the best dramas available. Public television should become a vehicle for Northern Californians to see programs of interest being produced in Southern and Central California public television studios and schools. None of this is possible with the present facilities of KIXE, nor will it be possible in the near future with our present financial picture.

An analogous quote came from the Manager of KQED:

> We want to be able to provide wider service to the elderly, to the consumer, the lonely, the poor, and others. Public stations seldom have the financial support they need to maximize their service.

The evidence collected by this committee indicates that the public television stations represent much unrealized potential for providing benefits to the residents of California, and that the State should recognize this potential in the framing of its telecommunications policy. The State presently supports the arts, libraries and other similar services to its citizens. It should give, at the very least, similar consideration to public television. Further, the Committee is impressed with the support given the enterprise by other states and wonders why California, the largest and most populous state in the nation, has failed to recognize any obligation in this area.

PUBLIC RADIO

As of the date of this report there were 56 noncommercial public radio stations in operation in California. (See Exhibit 5.) More than 16 million people live within the service areas of these stations, and each station broadcasts an average of some 100 hours per week. There are 33 stations licensed to colleges and universities, 14 to elementary-secondary school districts, and nine to private foundations. They range in power from ten watts to 110,000 watts, in annual operating budget from $3,000 to $300,000, and all broadcast in the FM band. Their missions vary from being simply broadcast laboratories wherein students learn the art of radio broadcasting to providing direct instruction in support of classroom activities within a school district to broadcasting alternative programming in a broad range of public and cultural affairs.

With the advent of educational television and the attention it has been given over the years, radio has not flourished as it might have. Through lack of support, the medium has not been able to demonstrate its potential as a delivery system. Thomas R. McManus, Program Director of KPBS-FM, the public radio station at San Diego State University, put it well when, at a Committee hearing in San Diego, he said:

> But while public radio has come a long way in serving the needs of the community, it is still a small voice in many parts of the country, including California. It is even a difficult medium to

> define, for the stations are as varied as the communities they serve. Basically, I think it is fair to say that when we refer to 'public' radio we are referring to those noncommercial stations deeply involved in programming for the public at large.....In California there are a dozen or so stations that can be described as 'public' radio stations.....They should not be confused with the more than thirty noncommercial stations that are largely low-power campus oriented operations, or with those totally enmeshed in school programming.

The Committee surveyed the public radio stations in California, 41% of which returned our questionnaire. From the information received we were able to develop a profile of the public radio enterprise in the state; of the stations which responded,

- 18% of the stations broadcast 365 days a year while the others are off during holidays, weekends, and/or summer vacations.
- 18% of the stations broadcast national public radio network programming.
- 10% are qualified to receive financial support from the Corporation for Public Broadcasting.
- 34% indicated they would be interested in broadcasting formal instructional materials.
- 34% would like to participate in a network.

As noted by Mr. McManus, and confirmed by our survey, public radio stations fall into one of two basic groups, with only a few exceptions. The groups are generally characterized by the operating power of the station. Those with power of 250 watts or less--especially the so-called "10-watters"--are run by students. Those with power output of more than 250 watts usually have some professional staff direction and program in the public interest. The

fact that less than one-third of the smaller stations, but more than one-half of the larger stations, responded to our survey and the comparative quality of the responses received suggest the difference in stature between these groups of stations.

We are not suggesting that the small station does not serve a useful purpose. We do suggest that some of these stations are occupying broadcast channels, of which there are only a limited number reserved for noncommercial educational use, for purposes that do not serve the broad public interest, a performance requirement that all broadcast licensees must meet. It would appear that the Federal Communications Commission may be somewhat less than aggressive in establishing the qualifications of radio applicants and that the table of allocations for noncommercial FM channels is overdue for review and revision. If the present level of proliferation of low-power stations is to continue, it is quite possible that development of higher-power, "public" radio stations may be seriously curtailed, or even eliminated.

We have not addressed the question of why we should be concerned about radio as a delivery system, especially when television appears to be so much more effective and is faced with so many problems that will be costly to resolve. First, we cannot truly say that television is, without reservation, more effective than radio. For many kinds of materials (i.e., music, on-the-spot coverage of

public events, current news) radio can be very effective. And the radio audience is not diminishing. In fact, new stations are coming on the air all the time,and the number of regular listeners continues to increase. Second, if we believe that public radio can become a more significant delivery system--and we believe it can--its problems can be solved at much lower cost than is the case for television.

FM radio has unique characteristics that enable it to broadcast specialized program services on sub-carrier channels of the main program channel. The sub-carrier channels are not tunable on the standard FM receiver; therefore, special receivers are required. However, these receivers are not costly ($30 - $50), nor do they require complex installation. Use of sub-carrier channels would allow a station to carry on with its regular programming while simultaneously broadcasting to target audiences, such as classrooms or adult learning centers. Our survey showed that only two stations in California are equipped to broadcast on sub-carrier channels, although the cost of adding this capability is nominal.

We want to avoid drawing any "either-or" comparisons between radio and television, or, for that matter, with any of the delivery systems we have been considering. We simply want to point out that it is a system worthy of careful attention and must be included in any plans that are drawn for development of telecommunications in California. Radio

needs an opportunity to demonstrate its capabilities. Its growth to the present number of stations and the kinds of services it provides has been, to say the least, uncoordinated. Its resources have been too limited to permit it to show what it can do. Even more, we do not see any hopeful signs that the level of those resources may increase to any significant degree.

We believe that radio can be the vehicle to bring certain kinds of instructional materials to relatively large audiences at a very low cost per consumer. An investment in at least one pilot project to test the potential of radio as a delivery system of instructional materials would be in order. The results of such a test would indicate the extent of support that might be provided in the future.

TELEVISION BROADCAST TRANSLATOR STATIONS

Television Broadcast Translator Stations, usually called simply "translators", are low-power stations for retransmitting the signals of television broadcast stations to areas where direct reception of such television broadcast stations is unsatisfactory, due to distance or natural barriers. They may operate on VHF (Channels 2 - 13) or UHF (Channels 14 - 69), are low-power, and are intended for direct reception by the general public. Customarily they are located in remote areas and operate unattended, with minimal annual operating cost. If a suitable, developed site is available they can be installed for a relatively low cost.

In several areas of California, translator stations have been used effectively by public television stations to extend their services to communities that cannot support their own television broadcast stations and are consequently denied access to public and instructional programming. (See Exhibit 6.) Existing stations reach about 85% of the state population through their primary and translator station transmissions. New stations projected in the Fresno and Salinas-Monterey areas will increase that coverage to some 90%. The remaining 10% might be served by addition of translator stations in strategic locations. In some cases, translator stations could provide a useful link between television broadcast stations and CATV systems in more remote areas.

Inasmuch as a translator station may be licensed only to qualified individuals, organized groups of individuals, broadcast station licensees, or local civil governmental bodies, the State is prohibited from being the licensee of these facilities. It could, however, assist noncommercial broadcast station licensees and local government agencies in establishing translators where a need exists and where local interest is evident.

We believe the State should include translator stations in its consideration of delivery systems needed to extend public and instructional broadcast services to the people of California. The improvement in coverage could be substantial in return for a comparatively small investment.

INSTRUCTIONAL TELEVISION FIXED SERVICE

(ITFS - 2500 Megahertz)

In 1963, the Federal Communications Commission opened a group of channels for use by educational institutions and organizations, identified as the Instructional Television Fixed Service, commonly referred to as ITFS. ITFS differs from the more traditional noncommercial, educational - or "public" - television channel in that it cannot reach the public outside of specified receiving points such as classrooms or learning centers. It is, in effect, a closed-circuit delivery system using the airwaves to interconnect a central transmitting point with one or more designated receiving points. The FCC Rules and Regulations define ITFS as follows:

> Section 74.931 (a). Instructional television fixed stations are intended primarily to provide a means for the transmission of instructional and cultural material in visual form with an associated aural channel to specified receiving locations for the primary purpose of providing a formal education and cultural development to students enrolled in accredited public and private schools, colleges and universities.
>
> (b) Such stations may also be used for the additional purpose of transmitting visual and aural material to selected receiving locations for in-service training and instruction in special skills

and safety programs, extension of professional training, informing persons and groups engaged in professional and technical activities of current developments in their particular fields, and other similar endeavors.

(c) During periods when the circuits provided by these stations are not being used for the transmission of instructional and cultural material, they may be used for the transmission of material directly related to the administrative activities of the licensee such as the holding of conferences with personnel, distribution of reports and assignments, exchange of data and statistics, and other similar uses. Stations will not be licensed in this service solely for the transmission of administrative traffic.

Distinctive features of the ITFS service are, first, its capacity to provide "upstream" communications of voice or data from receiving points to the point of program origination. This is accomplished by establishing ITFS response stations in conjunction with ITFS program distribution stations. Students in the classroom or learning center can talk back to the teacher in the studio. Second, an ITFS system can provide four channels of service simultaneously. Schools need multi-channel capability to meet classroom schedules.

The cost of a typical four-channel ITFS transmitting

facility is about $65,000. A typical receiving facility, which can be connected to the local distribution system within a school, costs about $1,500. The outlay required for a district of 20 schools would be on the order of $95,000, not including engineering and installation, which is not of major consequence since these facilities are relatively small and uncomplicated. To estimate the cost of studio facilities is difficult since so many variables are involved, but it must be noted that ITFS stations must conform to the technical standards of television broadcast stations which will demand high-quality studio equipment. The annual maintenance costs for transmission and reception can be estimated at 10% of capital outlay, or approximately 50¢ per pupil in the 20 school districts noted above.

In California, eleven public and private elementary-secondary school agencies, colleges, and universities operate twenty-six ITFS stations, programming on eighty separate channels. These systems serve 513 schools, 11 hospitals, 21 private industries, and two special agencies. The systems serve nearly 250,000 students (K-12) and an average of 3,500 adult students each year. Approximately 50 hours of programming are provided during each of the 40 weeks the typical system operates. All systems represent an investment of a little more than four million dollars. These figures reflect a surprising amount of activity for a little known instructional television

delivery system. (See Exhibit 7.)

For the most part, however, ITFS is relatively underdeveloped outside of the larger population areas, through lack of understanding. Its multiple-channel capacity, talk-back capability, and relative low cost, make it one of the better bargains in the group of specialized electronic delivery systems, especially for use at the K-12 level.

There is a limit to the number of ITFS channels available for this service. At the present time, in the immediate Los Angeles basin and the San Francisco Bay area, there are no more channels available. Unfortunately, there is some evidence that ITFS channels are being used for limited purposes to serve small audiences and even for what appears to be point-to-point interconnection, even though the latter use is prohibited by FCC rules.

We believe that steps should be taken by the State to support further development of ITFS systems and to coordinate its development to insure that this resource will be used efficiently and fully.

CABLE TELEVISION
(CATV)

WHAT IS CABLE TELEVISION?

There is much information available on the technology of cable and what it can do. A good introduction is On the Cable, the report of the Sloan Commission on Cable Communications, published by McGraw-Hill.

CATV differs from broadcast television in that the signal is carried from transmitter to receiver on a coaxial cable. Cable began as a means of providing television to areas where broadcast reception was poor or nonexistent for geographical reasons--in smaller communities surrounded by mountains, for instance. The function of cable was to relay the signals from existing broadcast stations to these inaccessible areas. Signals from surrounding broadcast stations were picked up on a large master antenna and fed through the cable to each subscribing household.

Although the number of CATV systems has grown rapidly since cable's beginnings, CATV still provides little more than a relay service in most areas. It is not what CATV is now, but what it can be if used to its fullest extent, that makes it interesting to those concerned with the future of telecommunications. The main benefits of cable are as follows:

A vast increase in channel capacity. How many channels a cable can carry is a highly technical question: in the current state of the art, that number is mostly limited by

the tuning ability of the television set itself. Separate tuners are now available which will enable any existing system to deliver 32 channels, while the newer dual cable systems can double that number. Few systems operating today actually deliver as many as 32 channels: the average number of channels per system in California, as of June, 1973, was 15. According to FCC ruling, cable systems in the larger television markets must have a twenty-channel capacity by March, 1977.

The increase in channel capacity can have a great effect on television content: it can mean the beginning of a "television of abundance," in the words of the Sloan Commission. Numerous benefits may ensue:

1. The viewer's range of choice will be dramatically increased. Television can conceivably become as diverse as magazine journalism, with more programs, or even entire channels, devoted to particular audiences and tastes. In this regard, the Sloan Commission likens CATV to the press:

> It [the press] can provide, for example, the mass magazine or the best-selling novel, purposefully directed at the widest possible audience: Life, Reader's Digest, The Valley of the Dolls. It can provide a quite different kind of national magazine or book, directed toward special audiences of one kind or another: Foreign Affairs, the New Yorker, Fanny Farmer's Cookbook. It can provide regional publications or local publications...one use of the press does not preclude another. The television of abundance has the same characteristic.

2. Control of the medium will become more decentralized. In The Economic Aspects of Television Regulation, The Brookings Institution points out, "The three networks

originate about 85 percent of evening prime-time programming and 60 percent of all programming for affiliated stations, which account for 87 percent of all stations." Such a concentration of power not only limits viewer choice but also bars entry to the independent programmer who feels he has something of value to offer an audience. Cable would tend to democratize television by making it possible for a large number of interest groups to participate and present their points of view: television can become a more accurate reflection of our pluralistic society.

Greater participation will be handled in two ways: lease channels and free access channels. In the former an independent programmer can lease a channel for a fee. In the latter, noncommercial groups will be allowed to present programs on designated channels free of charge. The FCC has required three types of access channels for systems in the larger markets by March, 1977: public access, educational access, and governmental access. If used as planned, these channels should provide a true public forum. Groups representing different positions on local issues will have a chance to air their views. Public health workers will have a means to disseminate health-care information. Educational institutions can offer courses for credit. The workings of local government can be brought before the people. The possibilities are as extensive as the imagination allows, including channels reserved for special interest groups, such as the medical profession, whose expertise depends on continually

updating their knowledge.

Two-way communications. The coaxial cable can carry a signal in either direction. It is technically possible for each wired household to send a signal to the transmitting station. This signal can be audio, visual, or digital: the last is the least expensive and most efficient, therefore likely to be the most prevalent. A digital return system, in its simplest form, enables viewers to respond to questions posed during a program. Such capability is especially valuable in educational programming, although the possibilities are much more far-reaching. The Industrial Electronics Division of the Electronic Industries Association discussed some of the applications of two-way capacity in a 1969 report to the FCC. The report, summarized in Ralph Lee Smith's The Wired Nation, cites the following services:

> Home Library Services. The contents of libraries can be put on microfilm or video tape...The home or business can request any book or publication...He receives it as page-by-page visual images on his screen, signaling for each page in turn...
>
> Facsimile Data Service...could consist of summary information on given subjects, or continuing summaries of new information or events relating to given subjects, or both.
>
> Delivery of Mail.
>
> Crime Detection and Prevention.
>
> Travel. Cable networks will substantially reduce the need for business travel.

Such are a few of the implications of two-way capability. When this capability is combined with a computer, the possibilities are even more extensive and are just beginning

to be explored.

The above is a sketchy list of some salient features of cable technology. We are witnessing the development of a two-way multi-channel system which can, when sufficiently large, be put to more diverse use than any existing communications system. Clearly the future use of such a tool must be guided by the society as a whole.

CABLE TELEVISION IN CALIFORNIA

The promise of CATV is still years away, and even those who rhapsodize on the merits of the new technology are sobered by the facts. If conditions for growth become sufficiently unfavorable, cable could become the "SST of communications," as one cable executive put it.

According to the April 22, 1974, issue of Broadcasting magazine, there are 3,100 cable systems, serving 5,770 communities across the nation; 2500 more systems are approved for construction. These systems reach 8.1 million subscribers, or approximately 25.9 million people. The average number of subscribers per system is 2,400, while the largest operating system, in San Diego, has over 75,000 subscribers.

The Sloan Commission reported that from 1969 to 1971, cable subscribers increased from 650,000 to 4.9 million, a compounded rate of 22 percent per year. In the three years since 1971, this rate has dropped to roughly 18 percent per year. The reasons for this decrease are many. Many of the larger cable companies have overextended themselves financially. The high cost of money for a capital-intensive

industry and FCC regulations have restricted the marketability of CATV.

California is the national leader in cable subscribers: 1.2 million subscribers reside here, and the nation's oldest and largest urban system is located in San Diego. We have assumed the number of California households, each of which represents a potential subscriber, to be about 7.2 million as of January, 1974. Because about one-sixth of the population in the state lives in sparsely-populated areas, where it will never be profitable to install a cable system, the number of potential subscribers in the state is reduced to 6 million, 20 percent of whom now use the cable. (Exhibit 8)

This 20 percent is the fraction of the households actually using cable. In June, 1973, there were already 4.2 million households in areas where cable was available, and another 900,000 households in areas with franchises pending. This means that roughly 5.1 million either have cable available now or will very soon. Dividing the 1.2 million households that currently do subscribe by the total households in the state passed by CATV, we see that only about 29 percent of the people who could be on the cable are actually taking advantage of it. Of course it distorts reality a bit to compute on a statewide basis the ratio of subscribers to availability, because the number varies so greatly from system to system. A small system in an area where television was previously scarce may achieve an 80-90 percent penetration. By contrast, the large urban systems, where

there are already three networks and one or two independent stations available over the air, often have penetrations below the state average: in Los Angeles, for example, the subscription/availability ratio was about 7 percent in June, 1973, for the largest system operating there.

These figures tell us some significant things about the cable industry in California. First of all, it is apparent that cable entrepreneurs are, by and large, banking on the future. Their costs are fixed regardless of the number of subscribers they reach, and these costs are extensive. While hard data in this area is difficult to obtain, it is safe to say that the enormous profits once forecast for the cable industry will not be achieved for quite a few years, at least in the larger systems.

A second implication is that the new services which cable can provide, even if they currently existed, would reach a relatively small percentage of the population.

In discussing the issues that surround CATV in California, there are certain things to keep in mind. One must distinguish between hardware and software, between the problems of operating the physical system and the problems of making beneficial use of that system. The cable operator is a hybrid. On the one hand, he often has no background in communications and has only an indirect interest in what goes over his cable, so long as his customers want to view it. As one system vice president stated, "We see ourselves as suppliers of a conduit." On the other hand, the cable operator's

profits are very possibly a direct consequence of what goes out over the wire: the more attractive his programming, the greater the number of subscribers may be.

Another point to remember is the difference between the cable industry now, in its adolescence, and a fully-developed system. As subscriber revenues come to represent an ever-higher degree of pure profit for the operator, more financial demands can justly be made on him. Too many such demands at this state could slow down cable growth even further, and the viewing public would be the ultimate loser.

The policy maker must thus view the cable operator in two different lights. On the one hand, he is a pioneer who has taken the financial risk to provide the public with an exciting new technology. On the other hand, he controls a physical system that more and more people will come to depend on as their main source of information, and he therefore has a power that must be closely monitored by the representatives of the people.

Keeping such considerations in mind, the Committee has outlined what it sees as the most pressing problems at the moment and has raised some questions as to the State's responsibility to deal with these problems. The information which follows has been distilled from a number of public hearings on the subject held throughout the state and from the Committee's ongoing research.

THE QUESTION OF REGULATION

The Federal Communications Commission has preempted

cable regulation for the most part, although state and local governments, usually the latter, retain the authority to grant franchises. (See Exhibit 9 for a summary of the FCC. rulings affecting cable.) These rules are still being debated by representatives of state and local government, the broadcast and cable industries, and other interested parties, and they are highly subject to change.

The other most prevalent authority over cable is local government. Local jurisdiction derives from a city's or county's power to award a cable franchise to a particular company, and regulation at this level deals more with fees and minimum services than with general policy considerations. The installation and monthly fees which a cable company charges its subscribers must be approved by the franchising authority. This authority in turn charges the cable company an annual franchise fee, expressed as a certain percentage of the company's gross subscriber revenues. This franchise fee averaged 3.33 percent throughout the state in June, 1973. According to FCC. ruling, however, effective for all systems by March 31, 1977, the local franchise fee can be no greater than 3 percent unless the costs of the local regulatory program so justify; under no circumstances may the franchise fee exceed 5 percent.

Some have argued that local governments do not have the experience and expertise needed to take responsibility for granting a franchise. While this may be true for some states, the Committee feels it is not so in California. Even if it

were, it is too late to do anything about it, since almost all of the large population centers of the state have been, or are being, wired. The franchising ordinances issued by California cities seem to include all the more crucial provisions for a good ordinance, thanks in part to the League of California Cities Model Ordinance, issued in 1965 and revised in 1972. The process has not been entirely smooth: see the transcript of the public hearing held by the California Assembly Science and Technology Advisory Council in San Jose, August 15, 1973, for an account of the problems encountered by the City of Saratoga in getting a cable system installed. Franchise terms for a representative sample of California cities is contained in Exhibit 11. It remains to be seen whether existing ordinances will provide solutions for future problems between cable management or cable subscribers.

In addition to federal and local authorities, some states have tried to regulate or at least to oversee cable television, with varying degrees of success. According to the June, 1973, issue of TV Communications, ten states at that time exercised some form of control over their cable systems, either through their public utility commissions or branches thereof, or through special cable commissions. The same source stated that Connecticut, Hawaii, Nevada, New Jersey, and Rhode Island assumed the role of franchiser. This committee also sent out its own questionnaire to all other states on how they dealt with cable TV, and the responses of

the 32 states which replied are in Exhibit 10 .

State regulation has taken many forms, ranging from complete preemption of local authority to a strictly advisory role. Some treat CATV as a full-fledged utility and apply the same standards, including rate regulation, that they apply to other utilities. Others merely prescribe minimum standards and offer legal or technical assistance to local authorities.

As for California, this committee feels that while no comprehensive state regulation is desirable here at this time, there are some problems which the State might help solve. More importantly, some issues may develop in the future requiring state activity. Below are some general areas where other states have stepped in, with comments on the status of similar problems in California.

1. Rate Regulation. Any form of rate regulation for CATV in California would be premature at the moment. In the first place, the laws of supply and demand are still operating in the cable industry, and in order to attract a large body of subscribers, cable companies are keeping rates low. The average installation fee throughout the state in June, 1973, was $15.35; the average monthly fee at that time was $4.98. Moreover, any increase in rates must be approved by the franchising authority, and that authority consists of elected officials responsive to the public. Of course, abuses can exist in any arrangement. Cities receive a

percentage of subscriber revenues and may therefore be economically interested in higher subscriber rates. Conversely, fully justified requests for a rate increase by the local cable system may be refused by a city council from fear of exciting public disapproval.

The Committee feels that rate regulation should not be considered until CATV achieves a substantially higher subscriber rate across the state. A utility with regulated rates must, first and foremost, be a necessity, and CATV is far from a necessity. If rates become exorbitant, individual subscribers may simply cancel service and continue to receive broadcast television as before. Not until CATV has essentially supplanted broadcast as the public's main source of information--and this may never happen--should rate regulation be considered.

2. Minimum standards for franchises. Such rulings at the state level would be redundant at this point, as most of the available franchises in the state have been awarded. Some state agency should monitor the performance of the state's cable systems, however, to make sure that local franchise agreements are ensuring reliable service to the public.

3. Technical standards. Standards of performance are required by both local and federal authorities, and the imposition of a state requirement seems excessive. However, some sort of state technical assistance to local authorities may be in order, such as a mobile test unit

for measuring system performance.

At present there is practically no facet of cable operation that is not covered by federal or local requirements. Yet a completely laissez-faire attitude on the part of the state is likewise unjustified, primarily because the ultimate division of power between federal, state, and local authorities has yet to be decided. The National Legislative Conference, a national organization representing 7,600 state legislators across the country, drafted a statement to the F.C.C. stating, among other things,

> Basically, the Task Force believes that if the Commission proceeds with the clarification and proposed rule-making without substantial change, it will seriously exceed its authority in several important ways: (1) by attempting to preempt state authority which is not subject to preemption; (2) by attempting to supervise States and their local arms in the exercise of their authority which is not delegated from the national level; (3) by regulating matters which fall in the jurisdictional province of the States, and (4) by attempting to substitute an informal "clarification" process for the legally prescribed procedure for substantive rule-making.

The National Legislative Conference feels that the F.C.C. has overstepped its bounds in the regulation of cable. Whether or not this is true, it seems clear that California should have some agency to maintain current and detailed information on the scope of federal cable regulations and on the continuing controversy which surrounds those regulations.

As the Committee sees it, a strong regulatory stance at the state level will unnecessarily confuse matters at this juncture. However, issues are developing which will most likely involve the State in the future: are state and local

prerogatives being usurped by the F.C.C.? Do local authorities have the interest and/or expertise to enforce their own standards? Do smaller cable systems have a responsibility to supply some of the same services that the F.C.C. requires only for larger systems? Many such questions will arise. At this point, the State's most useful role may be as watchdog.

THE NEED FOR SOFTWARE

Cable television is available to over 70% of the people in California, even though far fewer take advantage of it. Yet the creative use of the existing systems has barely begun.

The F.C.C. requires that all CATV systems in the top 100 television markets provide free "access" channels by March, 1977: public access, educational access, government access, and lease channels. (Five of the top 100 markets are in California: Los Angeles, San Francisco, San Jose, Sacramento-Stockton-Modesto, San Diego, and Fresno.) The intent of this requirement is to encourage greater citizen and institutional participation in programming. A cursory survey of the larger cable systems in California reveals that little of this sort of programming is being done. The public access channels either are black most of the time or are used primarily by a small group of video enthusiasts. The educational and government channels are in like condition. As a way of increasing public awareness, as an educational tool, cable has

a long way to go in this most wired of states.

In an earlier memorandum on CATV, this Committee raised certain questions which are relevant here:

> What, if any, is the state responsibility to assist educational and community groups in their use of CATV?
>
> What, if any, is the state responsibility to encourage an investment of franchise fee revenues collected by cities and counties in local program services?
>
> What, if any, is the state responsibility to encourage a greater commitment by CATV operations to local program services?

One of the main problems with public access seems to be public ignorance. Some of the larger systems provide both facilities and equipment for their public access channels. Groups can make appointments to use the studio free of charge; in some systems, the public can even check out portable videotape recorders for on-the-scene documentaries. Yet few people have so far taken advantage of such opportunities. The notion of actually being able to participate in television is simply too new for most people, not to mention their inability to use video equipment.

That a specific sort of leadership is needed is demonstrated by one of the more successful public access programs in the state. Under the direction of an active young reverend, who has many ties with the community and a background in television, the public access channel in San Jose presents from 80 to 100 hours of programming each week. This is accomplished with only one paid position--the director himself--and 30 volunteers. It is also accomplished for very little

money. About half of the equipment ($15,000 worth) was donated by the director, half by the cable company. The company budgets an annual $25,000 for the channel, a sum which includes some studio space in the company headquarters, some equipment, and the cost of utilities. Videotape is contributed.

Who should be expected to support public access television in its beginning stages? The first place to look for funds has been the cable companies themselves, and in most cases the larger systems in the state have supplied some equipment and some studio space. Yet many cable operators are unable or unwilling to assume the entire cost of production. This position seems reasonable in light of the fact that there is practically no limit to the amount of production which may eventually be demanded.

As for voluntary contributions, the history of subscription television suggests that depending upon voluntary financial support from the public is not the most secure way to maintain a television channel. In the case of public access TV, unlike any type of programming previously done, the chances of immediate public acceptance are unpredictable: there is little chance that the low-budget, amateur productions which will characterize public access in its beginning stages can compete with the kinds of programs to which viewers are accustomed. It is really too early to know how this new form will catch on--the local, more spontaneous quality of public access may lend it appeal. One way or the

other, it is likely that funding is going to be a problem for groups wanting to do community-oriented, public affairs programs.

Should the State support such efforts? The answer to this question involves some very fundamental issues with very few precedents to go by. On the one hand, using public money for a project of unknown value is always going to be open to criticism from many quarters. Moreover, publicly-supported programs, in the area of public affairs especially, often have political implications: as one Alaska newspaper editorial put it, "one man's culture is another man's politics." Certainly the controversies surrounding the Public Broadcasting System suggest that publicly-funded broadcasting is not yet free of political overtones.

On the other hand, there are other models on which to base state support for the media. Few people see the California Arts Commission as a propaganda tool, for example, and state support for public access efforts could have similar functions. The chief point is that until public access is given a chance to work, we will not know what can come of it. There are a number of low-cost ways that a state agency could help such an endeavor, short of offering direct funds for production. Public information programs might help. Another suggestion, which came out of this committee's public hearings, was the establishment of community production centers.

CATV educational access channels present a different set of public policy problems. Educational television is a

subject which is larger than cable--cable is just one means of delivering educational programming--and is discussed more fully elsewhere in this report. The important point is that education is traditionally a governmental responsibility, and educational institutions are going to have to take the initiative if educational access is going to work. Unfortunately, these channels are as underutilized as the public access channels, for much the same reason: no one knows how to proceed. No one is responsible, and no one has received a legislative mandate to develop these new channels of communication.

As with public access, there have been some beginnings. Various consortia of the state's higher education institutions are looking into the situation. The San Francisco County Board of Supervisors took matters into its own hands in the summer of 1973 and set up a task force to study the problem. From this study evolved a non-profit corporation, with members from the San Francisco educational community and various ethnic organizations. It is the responsibility of this group (The Educational Cable Television Access Committee) to oversee the programming of Channel 8, the San Francisco cable system's educational access channel.

The Access Committee's function is to manage the channel, which it should be able to do on a fairly low budget. Their task is to determine what the community wants, then to look for program sources. It is the latter

task which will prove most difficult, because the access channel itself is not in a position to assume production costs. Once programs are put together, the channel will put them over the wire for a nominal $30 per hour.

For all the "ifs" surrounding educational television, it is indisputable that electronic transmission is the most viable way to get certain kinds of information to the greatest number of people. It is also indisputable that CATV would be the most efficient delivery system if cable reached a much larger percentage of the population than it does now. A number of areas must be explored in preparation for such a project, such as the structure through which the state's educational institutions will cooperate in joint production ventures, and the means of interconnecting the state's electronic delivery systems. As for the number of people who subscribe to cable, it might very well be that the number would increase rapidly if more information that people want and need were available. This possibility includes public and governmental access as well as educational: it may well be that access television, once it comes into its own, will be heartily endorsed by the viewing public.

THE POLICY ISSUES

Developments now taking place in telecommunications, developments in which cable television can play a major part, have created some major policy issues for all branches

of government. It is not clear at this point just what the state role in these developments should be, but an unknown pundit's observation, "not to decide is a decision," is one the State of California should heed.

Our goal has been to describe some large problem areas that will require solutions in the years to come. In doing so, we have continually run up against certain basic questions. What kinds of services does the public want from its media? Is there a public desire for the kinds of alternative programming that CATV makes possible? Is the public willing to pay for these services? There is no answer to these questions now, and perhaps the answer can be found only through action. Whoever takes the initiative to enrich the content of television will have to do so, at least at the beginning, without a clear mandate.

Cable television is one facet of telecommunications. It is merely a delivery system, a tool, and there are still too many unknowns at this point for anyone to say what part cable will play in statewide telecommunications, including the important area of educational television. Through the murkiness of the problems, however, some general points stand out.

First, the usefulness of cable will depend on how many people it reaches. There are now over 270 separate systems in California, and nine of the nation's 25 largest systems are here; yet CATV still reaches only about a

sixth of the state population. We cannot predict what the growth rate is going to be, nor do we know what factors will contribute to this growth.

One encouraging sign is that the cable industry has recently changed its chief concern from winning new franchises to increasing the subscribers in the systems they already operate. This new emphasis produced a dramatic 30% increase in subscribers for the nation's top 50 companies between April, 1973, and June, 1974. It remains to be seen whether an intense marketing effort will continue to produce such gains.

Second, and connected to the previous point, we do not know how the introduction of new services will affect subscriber rates. "New services" can mean many things of course: everything from instructional television to public access documentaries. Whatever the new service consists of, it is unlikely to be profitable in the beginning, simply because the public will not be used to it. This fact has some policy implications, in terms of who will bear the cost for publicly beneficial programming:

> Not all of the new services are likely to be economically self-supporting (self-supporting services are those generating revenues that are at least equal to the added costs they impose on the cable system). The distinction between self-supporting and uneconomic services is not merely one of bookkeeping; it involves issues of social equity and economic efficiency. If self-supporting services are offered, no cable subscriber is worse off, since subscription fees are not taxed to meet their costs. At the same time, the social gains from cable are enlarged: since someone voluntarily is

> paying for them, the added services must be providing benefits at least equal their costs. Furthermore, in the absence of regulatory prohibitions, cable operators, animated by market forces alone, will offer self-supporting services in time.
>
> In contrast, uneconomic or subsidy services are provided only in response to regulatory requirement: the deficit they create becomes, in effect, a tax on cable systems and ultimately on cable subscribers. The presumed public policy judgment is that the social benefits from the services exceed the implicit tax. The subsidy need not come from cable revenues; they simply happen to be a convenient new variety of taxable funds.

This passage from the Brookings Report is included at length because it sums up the quandary involved in government support for new cable services. Can we measure public gains simply on the basis of what the public will pay for? This is too simplistic an approach, particularly in the area of educational benefits, where CATV has many applications. However, allowing the marketplace to determine the social benefits of less traditional services may be called for. A granting agency to initiate such projects on an experimental basis may also be needed, because the public can hardly be expected to pass judgment without testing the product.

Third, cable television is what it is today largely because of government regulation: there is no doubt, for example, that the number of cable subscribers would be much larger without the F.C.C. restrictions on signal importation. There is a crucial point for the states, however. How much authority is each level of government--federal, state, or local--going to have over the future of CATV? This is still

an open question. The opinion is growing in many quarters that the F.C.C. has already greatly usurped state and local authority in this area, and this controversy is sure to grow hotter before the matter is settled. It seems necessary that some state body keep itself well-informed of these issues as they develop.

A good example of the kind of power conflict we are referring to is occurring in California as this study is being written. The City of Anaheim issued a franchise to Theta Cable over a year ago, with the agreement that a number of educational access channels would be provided, since Anaheim has planned a multi-channel instructional program for the system. Theta Cable is happy with this arrangement. Yet the F.C.C. refuses to grant a certificate of compliance for the franchise, because the F.C.C. has stated that only one educational access channel is required of new cable systems. Many feel the F.C.C.'s refusal is a clear case of federal preemption of local authority. The State is not involved in this conflict because it has assumed no authority over CATV. The State is indirectly affected, however, because it may be in the State's interest to maximize the number of cable subscribers. This Committee is not saying that the State should take an advocacy position in the above example; we are saying that many more such issues are likely to arise--issues which may have implications over and above cable television itself.

Fourth, even if CATV reached enough California

residents now for it to be a viable delivery mechanism for instructional purposes, there is practically no instructional material to deliver. This problem is tangential to CATV per se and will be discussed in detail elsewhere: while we do not know exactly how much educational programming is available at this point, we can say with certainty that the total body of educational software is currently inadequate.

Fifth, and finally, regardless of what mixture of CATV, open circuit, ITFS, and other technologies might be used in a statewide telecommunications system, some form of interconnection between these systems must be considered.

The above are some areas of concern that will require eventual action of some sort. If the Committee has any recommendation to make at this point, it is that some state body of sufficient expertise be established to carry the project to fruition, to keep abreast of developments in technology and in federal policy, and to sustain state legislative interest in this important area.

INTERCONNECTION

At each of the several public hearings held by the Committee in 1973-74, from Eureka to San Diego, witnesses testified in support of the establishment of a system whereby public educational institutions, broadcasters, and government agencies could quickly and readily exchange video and audio program materials. At the present time exchange is via the U.S. Postal Service, special messenger, air express, or bus line. Needless to say, these methods are not the most dependable or rapid.

For many years the public television stations have declared their need to be interconnected so they can share their production capabilities and better serve their audiences with programs of statewide interest. An example they put forth is their interest in current and simultaneous coverage of state government. As Mr. Bradford Warner, Program Director of Station KPBS, San Diego State University, at a Committee hearing, put it,

> A statewide interconnection system should be established to provide increased sharing of programs among communities being served and to permit such additional services as coverage of state government activities. All of the state should be served--and this has been emphasized by other testimony--[we need] a means of reaching out to wherever those places are that we can't get to with the existing plant.

The Association of California Public Television Stations, representing all noncommercial television broadcasters in the state, recommended to this Committee and to the Panel on Telecommunications of the Assembly Science

and Technology Advisory Council "the establishment, development, and operation within California of a public television interconnection system linking together all of the stations."

The institutions of higher education are recognizing the values that can accrue from interconnection of their institutions, and some have taken positive steps in this direction: a system interconnects University of California at Davis with the Lawrence Radiation Laboratory at Livermore and also with California State University, Chico. The Coordinating Council for Higher Education, in a supplement to its Northeastern Higher Education Study, developed a blueprint for an ambitious distribution system interconnecting California State University, Chico, the University of California at Davis, six community colleges, and some 30 designated learning centers throughout 13 northeastern counties. Only a small part of that project has been implemented.

At this point a definition of "interconnection" is in order. We mean a system that will electronically tie broadcast stations, colleges, universities, public agencies, and/or regional instructional television organizations together and provide them with instantaneous access to program materials originating from a central source. In a sense, "interconnection" is another word for "networking". However, a network implies that program content is determined by the agency that operates the network. We are only

concerned with the mechanism at this point and discuss program determination elsewhere in this report.

We cannot say that an interconnection system will produce any immediate substantial savings. Only in the area of in-school television at the elementary and secondary level can any savings be readily identified. Here, we analyzed the ITV schedules of eleven public television stations and four ITFS systems for the week of December 2-8, 1973, and found that 25% of the program series used in public school classrooms were purchased from four libraries. Of that group, 21% were used regularly in six or more broadcast areas. We further checked with two of the major libraries to determine what savings might result if one copy of each program was delivered to a central point and distributed to all broadcast areas via interconnection. Based on the sample week, the projected annual savings in rental fees would be more than $60,000. Other savings would accrue as the stations used their local origination equipment less.

An interconnection system need not be justified solely on the basis of savings in operating costs, although the savings described above will become greater as the broadcasters become accustomed to program acquisition and scheduling on a statewide basis. Above and beyond cost effectiveness, interconnection will increase the variety of programming available to all. The resources of all program production centers will be shared through statewide

distribution.

The Public Broadcasting Service leases facilities to interconnect the public television stations in the Pacific Time Zone as part of its national network. Programs originating on the East Coast are recorded at the studios of KCET in Los Angeles and delayed three hours for Pacific Zone release, which includes public stations in California, Nevada, Oregon, and Washington. The PBS network is almost fully utilized during useful programming hours, and only by special arrangement can it be used for purposes other than to serve the national program service. It cannot be looked to as a vehicle to serve the interconnection needs of the state.

Interconnection can be accomplished by state ownership and operation of a land-based microwave system, rental of such services from private vendors, or rental of services from a domestic satellite operator. The Committee has explored these options in some detail. While precise information as to costs and configurations must follow a detailed engineering study, we can describe several systems and estimate their costs.

As for the first option, the Communications Division of the Department of General Services is responsible for an integrated microwave system that serves all of California. The system carries audio communications for such state agencies as the California Highway Patrol, Division of Forestry, Division of Highways and similar state agencies.

The system is not equipped to transmit video signals. (See Exhibit 12 for system map.)

This system utilizes many transmitter sites at high elevations, such as mountain tops in remote locations. These sites are costly to develop, and the Communications Division has some 150 such sites under its jurisdiction. Even though these developed locations will require additional construction to accommodate video equipment, they represent an important asset already available for other uses by state agencies. In addition, given the necessary funding, the Communications Division, an operating division of state government, is a logical center for the technical and management expertise that would be needed in connection with a statewide video interconnection system.

The Committee requested the assistance of the Communications Division in developing estimated costs for establishing and operating a video system. In so doing, the Committee recognized that (1) no video capability exists in the present system, and (2) estimates would necessarily be based on the definition of model installations at a few selected sites, the costs of which could be repeated at similar sites throughout the state. Resources are not available at this time to either the Committee or the Communications Division to execute the kind of refined engineering study needed to produce detailed cost estimates. However, the Committee is confident that its estimates are reasonable and that the method used in arriving at them is

valid.

We have offered two approaches to a microwave link, labeled: Plan A and Plan B. Plan A incorporates the use of specialized transmission facilities (ITFS or similar) to serve public broadcast stations, cable systems, schools, public institutions, and other specialized users. (ITFS is described elsewhere in this report.) Plan B has fewer capabilities.

PLAN A

A complete round-robin configuration, utilizing some 45 separate microwave paths and 30 ITFS, or similar, transmitters. Program material could be inserted at any point in the system.

Capital outlay.....	$4,392,000
Annual maintenance.....	176,000
Annual depreciation.....	317,000

PLAN B

A complete two-way system interconnecting public television stations, capable of serving most public radio stations and other public institutions by adding local transmission and termination equipment as needed.

Capital outlay.....	$1,975,000
Annual maintenance.....	132,000
Annual depreciation.....	103,000

Both of these plans assume the purchase of equipment and subsequent operation by the state. Each would provide one color-capable video channel in two directions plus at least two audio channels. The reliability factor would be

99%, with restoration of service in case of failure possible within twelve hours. As for reliability, current experience with present day microwave equipment is exceptional. The only way to increase the reliability factor in systems as extensive as these is to provide alternate paths with automatic switching. High costs make such sophistication extremely difficult to justify.

At a public hearing of the Panel on Telecommunications of the Assembly Science and Technology Advisory Council, held in September, 1973, a private supplier of microwave equipment testified on estimated costs of establishing a system similar to Plan B. Depending on available frequencies, his estimates ranged from $1.5 million to $2.1 million, with additional channels increasing the cost by $500,000 to $1 million each. Annual maintenance would be on the order of $50,000. He assumed that many elements of the existing state-owned microwave system could be used, such as sites, antenna systems, and power plants.

In all of the cost projections we have made, we must take into consideration the effect of inflation. Costs can be expected to increase at an average rate of 10% per year between the time these estimates are made and the time necessary equipment is acquired.

The second option would be to lease interconnection from the private sector. Companies qualified to provide this service have been unable to supply precise cost estimates because of special requirements involved; they have,

however, expressed interest in such a project.

Distribution via domestic satellite is a third option. This development is in a very fluid state, and at the time of this study it is difficult to obtain precise information. However, the potential for relatively low-cost and extremely flexible distribution is such that it must be given serious consideration.

The satellite compares with traditional land-based interconnection systems in three important ways. First, a single transmitter located in space can deliver signals to an infinite number of receiving points. Second, depending on the frequency used, the cost of receiving equipment may be no more than that of traditional systems. And third, maintenance costs can be substantially less than for traditional systems.

Thus far we have too little working experience with this mode of interconnection to develop much detailed information. The first experimental use of a frequency that has been allocated for educational use is now underway in a project managed by the Federation of Rocky Mountain States, involving the National Aeronautics and Space Administration, the Department of Health, Education, and Welfare, and the Corporation for Public Broadcasting. The ATSF satellite being used in this project will provide program services in three distinct areas--the Rocky Mountain States, Appalachia, and Alaska. The project is important because it will demonstrate the technical feasibility of a high-power

satellite transmitting to low-cost receivers. These receiver costs are presently on the order of $5,000 and could be less than that if more units were sold.

The September 9, 1974, issue of Broadcasting magazine reports that the NHK Technical Research Laboratories of Japan has developed a television receiving system that could bring about satellite-to-home transmission within five years. The ground receiver is estimated at $5,000 per single unit. The unit cost would drop to $3,000 if 1,000 units are produced, and to $1,000 if 10,000 units are produced. The experimental satellite is tentatively scheduled for launching in early 1977.

The traditional land-based, point-to-point microwave system demands a receiver interfaced with a transmitter for each user of the service. Strategically located multiple-channel ITFS transmitters connected to a microwave system will greatly expand the potential number of users since many receivers can look at one transmitter. With a satellite, the point-to-point microwave is eliminated, and all receivers look at the single transmitter in space.

Usually, discussion of satellite interconnection is cut short as soon as construction and launch costs are mentioned. These tend to start at $14 million and go up from there. In this connection, it is important to note that a single satellite will perform many functions. It would be totally unreasonable to assume that one would be dedicated solely to providing the kind of service being

discussed in this study. Costs would be shared by a variety of users. The economics of the situation seem to dictate that a state, or even a region, must turn to private satellite operators for the services they require--one avenue, of course, that should be explored. At the same time, it may be that a state, or consortium of states as in the Rocky Mountain Federation, should explore in detail whether a satellite dedicated to serving the many state or regional needs is in order.

In the present state of the art the satellite is the most costly means of interconnection. It is also likely to be the most dependable because of its comparative simplicity. And having said that, it is also most subject to complete failure since everything depends on one transmitter in space which is not readily accessible for quick repair. Nonetheless, it is an important option that must be considered.

In any interconnection system, multi-channel capability must be considered. Each user has his own unique requirements, and each type of local or regional delivery system has its own potential. Indeed, if the full multichannel capacity of CATV is utilized, we can expect a demand for a host of interconnection channels. Likewise, each ITFS system can transmit on four channels. The public broadcaster must have access to interconnection on short notice to present programs of current interest, and the schools and community interests must be able to guarantee their

schedules without fear of preemption. Many interests will be in competition for the same hours of the day. Certain hours will be at a high premium and others used very little, if at all.

In terms of hours of use, we believe the instructional interests will be the heaviest users initially. The demand by public broadcasters will increase in ratio to the rate at which they develop statewide programming. Conflict between all of these interests can easily develop.

We believe that two channels is the minimum that should be considered in the beginning and that capacity for additional channels should be a part of initial planning. Two channels should provide sufficient flexibility and protection for users for a time until software is developed to the extent that it will place greater demands on the facility. We believe that with two channels of interconnection, public and instructional television will take on a new character in California and that the state's citizens will be the beneficiaries of the improved services that will emerge.

We have not explored the use of video cassettes or the emerging video disc as means of distributing program material. These are not interconnection systems, but are certainly viable distribution systems. While standardization of format in video cassettes is developing, we have seen recent examples of tapes copied from master tapes that will not consistently play on all of the same model of playback machines

from a single manufacturer. Further, we believe that the video disc, when perfected and introduced within the next two years, as projected, may be a most significant development in low-cost recording and distribution. The state of the art must progress and stabilize before we can be confident of any projections in this area. In any case, videotape and/or video disc distribution is a library function and cannot serve the same purposes as an interconnection system. They are means of spreading resources to more users but they do not meet the needs of those engaged in broadcast distribution.

Throughout our study we have been faced with a lack of precise engineering information regarding interconnection, even though it is a subject that has been talked about for several years. We believe the need for interconnection is evident and the time has come to conduct a detailed engineering study that will provide a sound basis on which to make decisions. The potential users represent a variety of interests and we believe the State should provide the service. We recommend that immediate steps be taken to commission such a study.

SATELLITE COMMUNICATIONS

A Special Recommendation

Elsewhere in this report we discussed the use of satellites for interconnection, citing the project in the Rocky Mountain region using a high-power, low-frequency satellite (ATS-6). On November 21, 1974, we witnessed a demonstration of the ATS-6 satellite in Needles, California, and were able to obtain current information on the progress of the experiment and to view programs being relayed to that site from Denver, Colorado. The quality of transmission was excellent and we learned that the service since the beginning of the project has been very dependable. On the basis of what we now know, we want to give this subject special emphasis and make a specific recommendation to the Legislature.

The ATS-6 satellite is the only transmitter in space operating on a channel that has been reserved for non-commercial use. It serves an eight-state area, divided into an eastern and western footprint (see Exhibit 13). The Rocky Mountain project is designed as a demonstration of the performance of the satellite, the performance of low-cost ground stations ($4,200), and the feasibility of an eight-state consortium approach to instructional television. All indications are that the results will be as positive as the project designers hoped.

By prior agreement, ATS-6 will be shifted in the spring of 1975 to serve India in another experimental project. That project is expected to last one year. As we understand it, there are no

definite plans for use of ATS-6 after the India project. It occurs to us that, if a sufficiently important project involving its use was designed, the bird could be shifted to serve an area of the United States again.

As for the future of space communications using reserved, noncommercial channels, plans are very much up in the air. Before a private developer will include this capability in any satellite, he must have assurance there will be customers to use it. There have been discussions attempting to identify potential customers, but nothing firm has emerged. If satellites are launched before noncommercial customers are known, it is possible they will be put in space without the capability for such public services. Once there, with a projected life of seven to ten years, the development of such services could be foreclosed for at least that length of time. Important decisions about public communications via satellite must, therefore, be made soon.

We believe that California stands to benefit more than many other areas of the country in the use of satellites in its developing telecommunications systems. The State should not ignore an opportunity to learn more about the benefits that will accrue. In the past, the Legislature has financed certain developmental projects. It has an opportunity to make an investment now that will be of substantial benefit to the statewide educational enterprise, public communications, and to all citizens of the state. Long-range planning will be more intelligent as more is learned about space communications. We also note that much of the space-related communications industry is located in California.

There are unique advantages connected with becoming involved

with ATS-6. The bird is already in space and has demonstrated its performance. Construction and launch costs have been paid. It is owned and operated by a public agency, NASA. The financing required would be for ground stations and software and, due to the experimental nature of this kind of activity, outside funding might be obtained to share the costs.

We recommend that the Legislature establish immediate contact with NASA, H.E.W., private foundations, domestic satellite developers, and adjoining states to explore the possibility of designing a satellite project using ATS-6 after its experimental period in India. The lead-time required to design such a project is substantial, so early action is indicated.

COMMERCIAL BROADCASTING

During the course of its study, the Committee was made aware of the substantial contribution to public communications made by the commercial broadcasters of the State. Representatives of the industry testified at public hearings and people from education, public broadcasting, and the community also appeared to provide further input as to the work being done by commercial stations. The dimension of that contribution was not documented in detail, but it is apparent that the industry is engaged in meeting its public responsibility.

Commercial broadcasting is primarily an entertainment and merchandising medium. The American system of broadcasting is designed to serve the free enterprise system and government control over the substance of broadcasting extends only to the areas of equal time in politics, fairness in public issues, protection of public morals, and a guarantee of service in the public interest, convenience and necessity. Within the industry there is a high degree of competition for audience and revenue from sale of time. It is, indeed, a unique system among the many different systems throughout the world.

Since commercial broadcasting must cater to mass audiences to be profitable and to survive, its prime hours must be devoted to programming with the broadest possible appeal. This is only partly the reason that the more specialized programming is usually scheduled during early morning time and on weekends. Another

reason is that it is mostly during these hours that the audience for special programs, such as telecourses, is available. These people have a particular motivation to participate and can do so at that time without interference with their normal activities. It must be said that commercial broadcasters cannot afford to program instructional material at prime time, and in meeting that problem they provide a unique service by scheduling such materials at times that better serve the special interest audience.

Early morning and weekend special programming is not the only contribution commercial broadcasting makes. News and analysis, coverage of special events, documentaries, are a significant part of the regular fare of the industry. Many of these events are carried during mass audience viewing times, and it is well documented that when a station or network schedules them, the audience size is often substantially lower than it is for a prime entertainment program on the air at the same time. Nevertheless, the broadcaster often carries such programming to meet his obligation to provide services in the public interest.

We do not want to engage in the argument as to whether broadcasting develops and dictates public taste or whether the public decides the substance of broadcasting. By F.C.C. dictum--and by restrictions placed on the F.C.C. itself--government influence on programming is minimal. Certainly, any such influence by the State is totally preempted.

There are other contributions by the industry that should be noted. Some stations have been most generous in supporting public broadcasting stations in their areas. They have donated equipment, provided personnel, have produced programs in their own

studios, given publicity, and have cooperated in many other ways. In some instances, a public station would not have existed had it not been for a commercial broadcaster. Some may have protected their own interest in taking such action, but the net result has accrued to the benefit of the public.

Commercial broadcasting, its primary mission being what it is, cannot meet the demand for public communications. It cannot provide the specialized services required by special interest audiences. The need for public, noncommercial communications systems will continue and demand for such systems will increase. It can be expected that the industry will continue to provide its support.

GOVERNMENTAL AND COMMUNITY AGENCIES

One of the original duties of this committee was to explore the application of telecommunications by governmental agencies for manpower development, personnel inservice training, public education in crime prevention, social welfare, and other programs. The committee included some representative community agencies for survey in developing a plan for this phase of its study (see Exhibit 14).

Chief administrators of a number of state agencies were interviewed, and several representatives of city and county governments and local community agencies testified before the committee at public hearings. It soon became clear that each agency was defining telecommunications in its own terms and there seemed to be no common ground on which to base any valid conclusions. For the most part they looked to public communications as a vehicle for public relations. Only one or two seemed to grasp the notion that we were interested in public education, not public relations, and that we were interested in the application of communications to social and public issues.

Among these few exceptions are the libraries. They see in CATV the opportunity to extend their resources to the public in an entirely new format. One example is the San Francisco Public Library that has received a sizeable grant from the State Library to explore the use of CATV as an extension of its traditional activity. We fully expect that

the libraries will point the way for other similar groups to follow in the development of meaningful and useful television software.

A major effort would be required to educate agency leadership in the potential of public television and radio before our survey could produce any useful data. We determined that we had neither the resources nor the time to undertake that venture and decided to concentrate on areas of investigation that would be more immediately productive.

We believe that agency application of telecommunications is important and should be given some close attention in the future. We recommend that future investigation here be preceded by a well-developed informational program to acquaint the agencies with the potential of the media.

USING THE DELIVERY SYSTEMS

The foregoing catalogue of delivery systems shows that sufficient communications hardware has been, or is being, created to provide most of California with a variety of services. The amount of available time on these noncommercial media is finite, although CATV stands to increase this time substantially. Worry over insufficient channels of communication is beside the point, however, given the present lack of a coordinated plan for the use of the existing channels.

We have alluded repeatedly in previous chapters to public uses for telecommunications such as public access cablecasting, community programs by the public broadcasters, and others, which are being initiated by non-governmental bodies throughout the State. Many ongoing institutions and *ad hoc* citizens' groups have been generated by the prospect of public telecommunications, and their efforts deserve attention and possibly support from the State. We turn now to uses of communications technology which the State itself must initiate.

The introduction to this report stated that a vast potential market exists for nontraditional education in California. This growing demand is symptomatic of a national phenomenon.

In January, 1974, the first annual National Conference on Open Learning in Higher Education was jointly sponsored in Lincoln, Nebraska, by the State University of Nebraska

and the Great Plains Instructional Television Library. The conference drew over 400 leaders in the field of education from across the country.

The transcribed proceedings of this conference contain some of the most current thinking on the future directions of postsecondary education. One of the participants, Dr. K. Patricia Cross, President of the American Association for Higher Education, based in Berkeley, California, cited three trends which she sees as significant in the future shape of postsecondary education:

(1) 'student-inclusiveness'--a growing demand on colleges to accommodate all who want to attend, rather than to select only those who can meet the standards of a particular institution. Such a trend is already evident in the proliferation of open admissions community colleges in California and elsewhere.

(2) 'campus-expansiveness'--the geographical spread of the campus and the need to extend the availability of learning institutions.

(3) 'education-cooperative and/or education-competitive'--the trend for more and more people to obtain education outside the regular school system.

In regard to this last point, Dr. Cross stated:

> But for a number of years now, enrollments in the so-called educational periphery consisting of business and industry, government agencies, proprietary institutions, community agencies and correspondence and television courses have been growing faster than those in the educational core. It is estimated that by 1976, more people will be learning from sources outside the school system than in it.

She went on to say that the only change within higher education comparable to the growth of cooperative education is in nontraditional studies programs, two-thirds of which have

arisen since 1970.

Cross's statements were part of a large body of conference testimony concerned with the emergence of "the learning society" and with how our educational institutions are going to prepare for the growing demand for higher learning presented in more flexible ways. Such broad educational policy considerations are outside the province of this committee, except that there are obvious implications for the use of telecommunications.

Exactly how electronic delivery systems can be employed in an open learning system is still a matter of opinion and experiment. Television and radio courses form the core of Britain's Open University. Debate still goes on in this country as to the desirability of "electronic teaching," but it is safe to say that the consensus, based on numerous scholarly studies, is that electronic media are efficacious and cost-effective tools when accompanied by supportive materials and access to live teachers. There are already some precedents for the extensive use of telecommunications in extended learning:

The Chicago TV College began in 1956 as a Ford Foundation experiment to see if open-circuit broadcasting could provide the first two years of college necessary for an Associate of Arts Degree. The TV College is now an adjunct of the seven-campus community college system in Chicago and has extended its scope to a greater variety of services, including occupational and literacy training as well as pre-

university curriculum. The TV College uses Chicago's two public television stations exclusively, and the telecourses are also recorded on video cassettes, available in certain public libraries and learning centers.

While relatively few use the TV College for a complete two-year program, about 2,500 graduates of the City Colleges of Chicago since 1960 have done at least a semester of work entirely by television. Over 80,000 have enrolled as non-credit students, and audience surveys indicate that over 10,000 people watch every program.

The S-U-N Program in Nebraska is the most ambitious project to be mounted thus far in statewide open learning systems inside the United States. Planning for the system began in early 1971 and has been funded by the U.S. Office of Education, the National Center for Educational Technology, and the National Institute of Education. State money was made available later, as the project progressed. The target audience for the system is "the adult, from high-school senior through senior citizen, who for whatever reason either will not or cannot receive college instruction in the traditional manner."

The means for delivering course material include six basic modules:

(1) color television programs, carried over Nebraska's state-owned public broadcasting system;

(2) a course syllabus, or study guide;

(3) a series of audio cassettes, one for each lesson, which will be sent to the students' homes;

(4) an instructional kit, which will vary from course to course and may contain such devices as filmstrips and viewers;

(5) a textbook; and

(6) introductions to the daily lessons in the newspapers.

All design, production, taping and broadcasting of televised material is done from the multimillion-dollar Nebraska Educational Telecommunications Center.

A cardinal feature of the S-U-N system, which offered its first two courses, in accounting and introductory psychology, in the fall of 1974, is that it has been planned from the bottom up in systematic fashion and has been subject to evaluation at every step along the way.

In describing the planning process for S-U-N, Jack McBride, Executive Director of the program, set forth some considerations applicable to anyone contemplating a similar project. One of these considerations was: just what delivery systems are most effective for a nontraditional student body? The S-U-N project has decided upon a mixture of many available media. It is very tempting to use the most sophisticated technology possible, just because it is the most sophisticated. It may not always be the most effective, however, and the S-U-N planners have spent much time testing just what television can and cannot do.

George L. Hall, Director of Telecommunications for the Commonwealth of Virginia, set forth some common-sense guidelines for answering this question. He summed up his approach as the "law of parsimony": do what is necessary and no more;

before investing in the most expensive technology, make sure that the less expensive means of communicating symbols are inadequate.

Another question is, how elaborate should production be? On the one hand, there is the need to hold the attention of the learner, and television is particularly suited to this need. High-cost children's programs like Sesame Street have used TV's capacity to entertain as a way to instill basic concepts.

On the other hand, such high-cost techniques may be unnecessary and even undesirable at the adult level. James Zigerell, Head of the Chicago TV College and one of the patriarchs of televised instruction in the U.S., has uttered several caveats in this regard:

> In the world of instructional television it is expected the critic will condemn an instructional television project...if it does not employ the expensive production techniques of the television commercial. Even though the project has goals quite different from those of the advertiser, aims at a narrow target audience with specialized needs, and operates with a budget far below the six million dollars of Sesame Street.

Zigerell has apparently obtained good results from more modest productions, although he concedes that recent attempts have been made "to improve overall production quality and add the entertainment values to instruction needed to recruit and hold new kinds of audience."

Research in this matter at S-U-N is still inconclusive. No single television format was satisfactory to all viewers. One conclusion, however, was that people motivated by the subject itself preferred "lesson formats with a minimum

of entertainment and a maximum of direct instruction."

The above problems in how to best employ educational telecommunications point to the need for more experimentation. The returns are not in yet, and the success or failure of the S-U-N project will probably have a great effect on the future of open learning in the United States. The proper delivery system is but one of the questions which the S-U-N people are trying to answer: Who is the audience? What are the goals of the curriculum? What shall the administrative structure be? How shall credit be awarded?

The British Open University has been termed "probably the most radical and far-reaching experiment in higher education to take place in any country since the last war." Planning began on the Open University in 1964, and it accepted its first enrollment of 24,191 students in January, 1971. In January 1972, total enrollment increased to 36,100; January, 1973, to 44,400; and in January, 1974, to 46,000. Of the first year's enrollments, 15,823 students took 17,664 examinations in December, 1971, and 16,346 credits were awarded (one credit is given for the completion of each 34-week course, and six credits are required for a degree). It should be noted that grading was on absolute standards, not a curve, and that the academic standards were comparable to other British state universities.

The Open University uses a combination of teaching tools and is based on home-teaching. Courses are broadcast

on BBC television and radio between 5:30 p.m. and 7:30 p.m. weekdays and on Sunday mornings. Written material for self-instruction supplements the TV courses, and student assignments are graded either by computer or by a national team of part-time tutors. There are regular occasions for meeting with tutors at one of 250 learning centers, distributed throughout 12 geographical regions, and there are compulsory, intensive summer sessions. All broadcast material is produced in a central location.

Though there has been criticism of the Open University, it is indisputable that it has delivered higher education to a segment of the population which would otherwise be denied such services. In an article for an American magazine, one spokesman from within the Open University wrote:

> Whether the particular curriculum it has developed will find meaning within the United States remains to be seen. But content apart, what the Open University has done is to develop a teaching <u>system</u> that is potentially applicable to any country; and on the scale in which it is operated in Britain, it will produce a graduate at about 20 percent of the cost of a conventional university graduate.

The social environment in which the Open University began makes close analogies to American education inapt. Education in Britain has historically been elitist. The author of the above statement also pointed out that as late as 1962, in England only four percent of the relevant age group entered a university, another 2.5% into teacher training (a comparable figure for California is 70%). Public higher education as we know it in California does not exist in Britain and, therefore, the unmet demand for further

education was substantially higher. The central idea, however, is applicable and the results so far, in terms of the amount of learning being accomplished with the extensive use of telecommunications in combination with written tests and live tutors, are nothing less than dramatic.

Beginnings in California

The public testimony collected by the Committee contains accounts of current efforts to establish non-traditional studies programs in California. Most of these efforts are embryonic. The following are the most advanced efforts to date:

(1) The Communiversity Project in Orange County originates from the Coast Community College District, consisting of Orange Coast College and Golden West College. The District owns and operates its own PBS-affiliated broadcasting station, KOCE, which covers not only the District population of 450,000 but also another one million residents of Orange County.

Station KOCE came on the air in November, 1972. The Communiversity Project people began presenting courses for credit in the fall of 1973. Since then they have presented from four to six courses per semester. The courses have drawn a total enrollment of 10,000-12,000 students in a space of three semesters. Three of the courses--

one in anthropology, one in psychology, and one in free-hand sketching--have been produced in the KOCE studios. (The anthropology course is discussed more fully in the chapter on Public Television). Other courses include "Family Risk Management," physical geography, and sewing.

The project employs textbooks, study guides, and other materials to support the broadcasting segment. College instructors are also available for consultation.

(2) Project Outreach has been organized by San Diego State University, the University of California at San Diego, Coast Community College District, and other institutions in San Diego and Orange Counties; its purpose is to combine the resources of all three segments of higher education in order to provide extended education, using television as the core. The project, started in July, 1972, is still in the planning stages, under a grant from Title I of the Higher Education Act. There is coordination between this project and the Communiversity--the Curriculum Committee of Project Outreach supervised the pilot program of the Communiversity's psychology course-- and there is likely to be extensive cooperation in the future, given the regional proximity.

Outreach will make use of open circuit television (primarily KPBS and KOCE), CATV, radio, telephone feedback, correspondence materials, and tutorials. The first course, due for presentation in September, 1975, is an interdisciplinary investigation called "Contemporary California Issues," and it draws upon the resources of 18 higher education institutions in the area.

Project Outreach represents a working union between television people and educational consultants, who are active at the design stages of the course. The project's next proposed series is called "Science and the Future of Man."

(3) The development of postsecondary consortia started in 1970 for the purpose of producing telecourses. Dr. Dale Heckman, a researcher in higher education, provided the Committee with the following tables showing both the growth of such consortia and all telecourses produced to date by educational bodies, including, but not limited to, the consortia:

CHRONOLOGICAL GROWTH OF REGIONAL CONSORTIA,

1970 - 1974,

FOR I.T.V. ON POSTSECONDARY LEVEL

(California)

Name	Number of Institutional Members				
	Fall 1970	Fall 1971	Fall 1972	Fall 1973	Summer 1974
Los Angeles Cons'm. for Community Coll. TV	18	18	26	31	33
Telev'n. Cons'm. for Valley Colleges (Community College)				8	8
Bay Area Community College TV Cons'm.				20	20
No. Cal. Regional ITV Cons'm. of Universities and Colleges			2	12	
Calif. Cons'm. (CSUC)					19+
S.F. Cons'm,"Educat'l Access Com."					?
TOTAL MEMBERS	18	18	28	71	80+

TELECOURSES PRODUCED IN CALIFORNIA SINCE 1966

(Pre-1969 portion may be incomplete)

Since 1969 (assuming a maximum "shelf-life" of five years), the following ITV series have been designed and produced by or with California institutions of post-secondary education:

Year	Title	Discipline	Producing Institution
1966	History of World Theatre	Drama-Eng.	L.A. Comm. Coll. Dist.
1967	Wheels, Kilns, & Clay	Fine Arts	USC w/KNXT
1968	Earth & Its Elements	Geol.	San Diego Eve. Coll. w/KPBS
1969	Mexican Experience	Hist.	San Diego Eve. Coll. w/KGTV
1970	Intro. to Psychology	Psych.	L.A. County Schools w/KABC
1970	The Exceptional Child	Spec. Ed.	USC w/KNXT
1970	Today's Biol. Revolution	Biol.	USC w/KNXT
1970	Psychiatry & Crim'l. Justice	Pub. Adm.	USC w/KNXT
1970	The Living Library	Libr. Sci.	USC w/KNXT
1970	Effective Living	Health Ed.	Long Bch. City Coll. w/KABC
1971	History of Mexico	Hist.	L.A. Comm. Coll. Dist. w/KNBC
1971	Law for the 70's	Bus.	L.A. Comm. Coll. Dist.

Year	Title	Discipline	Producing Institution
1971	Prof'l. Writing: Article	Engl.	Coll. San Mateo w/KCSM
1971	Prof'l. Writing: Short Story	Engl.	Coll. San Mateo w/KCSM
1971	Aeronautics: Basic Ground Sch.	Aeron.	Coll. San Mateo w/KCSM
1971	Health Edu. 1	Health	Coll. San Mateo w/KCSM
1971	Ceremony of Innocence	Comp. Lit.	USC w/KNXT
1971	Real Estate Invest.	Real Est.	San Diego Eve. Coll.
1971-2	Buying Game I-V	Econ.	Coll. San Mateo w/KCSM
1972	Intro. to Phys. Geog.	Geog./Geol.	L.A. Consortium w/KHJ-TV & Rio Hondo Comm. Coll.
1972	Man vs. Environment	Econ.	USC w/KNXT
1972	Designing Success: Strategies	Educ.	Media V w/LaVerne Training Center
1972	Prescription for Living	Health Ed.	USC w/KNXT
1972	History of Art	Fine Arts	Pasadena Comm. Coll. w/KCET
1972	Intro. to Astron'y	Astron.	L.A. Consortium w/KHJ
1972-3	Your Child's World	Educ./Soc.	Coll. San Mateo w/KCSM
1972-3	Your Child's Growing World	Educ./Soc.	Coll. San Mateo w/KCSM
1973	Great Consumer Contest	Home Ec.	L.A. Consortium w/KABC-TV & Coast Comm. Coll. Dist.

Yea	Title	Discipline	Producing Institution
1973	Health, Poverty & Public Policy	Polit. Sci. or Soc.	No. Cal. TV Consortium
1973	Help Us To Read	Educ.	No. Cal. TV Consortium
1973	Now We Are Reading	Educ.	No. Cal. TV Consortium
1973	Next Billion Years	Inter-discip.	CSU San Jose w/ San Diego Comm. Coll.
1973	Human Relations & School Discipline	Ed. Psych.	Media V w/LaVerne Training Center
1973	Psych. Today	Psych.	U C. San Diego w/CSM Public'ns
1973	Biosphere & Biosurvival	Biol.	CSU San Diego
1973	Free-hand Sketching	Fine Arts	Coast Comm. Coll. Dist. w/KOCE
1973	As Man Behaves	Psych.	Coast Comm. Coll. Dist. w/KOCE
1973	The Art of Thinking	Phil.	USC w/KNXT
1973	Intro. Property Management	Real Est.	San Diego Eve. Coll.
1974	Dimensions in Culture	Anthro.	Coast Comm. Coll. Dist.
1974	Environ. Imp. Reptg. & Eval.	Envir.	No. Cal TV Consortium
1974	Sewing Corner	Home Ec.	Coast Comm. Coll. Dist. w/KOCE & CSU Fullerton
Fall 1974	From Chant to Chance: Music Appreciation	Music	L.A. Consortium w/KCET
Fall 1974	The Time to Grow: Child Development	Psych.	L.A. Consortium w/KABC

All but one of the consortia are comprised of community colleges; the exception is the California ITV Consortium of State Universities and Colleges. The community college consortia are funded by member institutions, which make an annual contribution on an a.d.a. basis. The total initial enrollment for telecourses offered between the summer of 1973 and the spring of 1974 was 36,084 students.

(4) Various other efforts are being made by individual colleges or universities or combinations thereof, and our list here is not thorough.

There has been a great deal of activity in Northeastern California to extend educational services to the many widely-separated communities of lesser population. These efforts involve California State University at Chico, University of California at Davis, and six community colleges in thirteen northeastern counties. The community college and Humboldt State University in Eureka-Arcata have been included in many of the discussions. Dr. Stanford Cazier, President of Chico State, envisions an eventual regional effort involving these educational institutions along with the public broadcasting stations in Redding and Eureka.

The State University at Chico is something of a pioneer in its area. They have built an $8.5 million Learning Activities Resource Center which incorporates traditional library, mixed media services, and computers. According to Dr. Phyllis Bush:

> We are ready to move into the arena equivalent to the Open University through development of programs using commercially prepared materials, materials jointly developed with other institutions, and materials prepared in our campus facilities.

Chico State is also re-establishing a microwave link between its campus and public television station KIXE in Redding.

The University of California, Davis, is one of the other institutions referred to by Dr. Bush. In a joint effort with Chico, a microwave link has been established linking those two institutions. UCD has for some time been interconnected with the University of California Radiation Laboratory at Livermore and has more recently established a link with the CATV system in Stockton by which students in Stockton can watch live lectures from the Davis campus and ask questions of the lecturer by means of a telephone hook-up.

Stanford University uses an ITFS channel to trans-

mit engineering courses to industries in the area.

There are other examples of similar activity, on a limited scale, elsewhere in the state.

The Next Step in California

The above is a very cursory survey of the kinds of efforts being made to provide open learning in this state. It does not convey the real fervor about this enterprise that is beginning to be exhibited by all segments of higher education.

The problems encountered thus far have been many. The chief difficulty at the moment is coordination. Throughout our public hearings there were statements by leaders in education pointing to the need for a centralized, systematic effort from the state level. One of the strongest statements was from Dr. Norman Watson, Chancellor of the Coast Community College District, who said:

> If we are to be successful in California in realizing the potential that exists in a technology which Professor S. I. Hayakawa has described as a revolutionary instrument more powerful than Marxist idealogy, much more will be needed than the piecemeal efforts by struggling institutions in scattered districts throughout the state. Unless massive state support and commitment can be marshalled, we are doomed to a paltry effort.

This, coming from a man who heads up one of the State's most substantial open learning projects, cannot be dismissed as pure rhetoric. Jack Kenaston, Manager of Station KLCS, shared Dr. Watson's sentiments:

> I would echo the need for full statewide cooperative development in the production area and in programming. Right now, everyone's scrambling for the buck. We are all going off in our own scattered directions. I dare say there are seven people doing the metrics thing right now. If the State had the money we could get the best teachers, the best producers, the best writers, and find the best place to do it in everybody's benefit.

Some sage once commented that nothing is more powerful than an idea whose time has come, and this may be the case for open learning in California. Dr. Kenneth O'Brien, Jr., Associate Director of the State Coordinating Council for Higher Education (now the Postsecondary Education Commission), estimates that by 1975 the learning force outside traditional programs in California will be between nine and eleven million adults, compared to about two million being served by traditional institutions.

As this report is written, there is a meeting being planned by educators from throughout the state who have been actively involved in using telecommunications to extend the benefits of postsecondary education. The meeting will hopefully evolve into a "mini-Nebraska Conference." One of the organizers, from the Office of Extended Learning, University of California, Berkeley, stated that it is now feasible to generate statewide programming, save for two large problems: lack of coordination and lack of high-quality software. Dr. Gary Goldsberry, a coordinator of Project Outreach, called for the endorsement and funding of a Center for Study by Telecommunications. So far, though a

number of high-quality telecourses have been delivered, there is no plan for a sequence of courses and no overall goals which can act as a unifying influence. Nor are there any financial or accrediting mechanisms by which all institutions can use the productions of each. And for the most part, though the coming conference may signal a change in this respect, there has been insufficient communication even between institutions engaged in the same endeavor.

Funding is a second problem of major proportions affecting different institutions differently. Dr. Stuart Cooney, of the State College ITV Consortium, in speaking of hardware needs stated, "State allocation formulas for California State Universities and Colleges have all but eliminated staff support and facilities development for such purposes." As an example, California State University at Chico has been left with a laboratory full of new equipment with only a handful of operating personnel.

Hardware needs are minimal compared to software needs, however. Public testimony confirmed a general lack of suitable courses from outside the state and great difficulty in locating a few that are suitable. The kind of money that is needed is initial capital for production. There is great potential for the courses to eventually pay for themselves as enrollment grows through the years. The S-U-N Project, for example, is banking on five sources of initial income: federal underwriting for research and development, support

from private foundations, revenue from leasing courseware, student tuition (now set at $50 per course), and state appropriations. Planners hope for S-U-N to be almost self-sufficient within five years. The situation in California suggests that any state appropriation should take the form of a revolving fund, in which front-end money would come back as the courses are offered.

Production costs themselves are very difficult to predict--so much so, that the Committee does not feel it would be providing a service by attempting an estimate. Figures collected from public hearings ranged from $20,000 to $750,000 for a single course of about the same length. The amount spent on production varies with the purposes desired, where the production is done, and numerous other factors.

Overall production coordination and funding are among a bevy of more basic questions which must be answered about the goals and uses for instructional technology at the postsecondary level, questions already mentioned in passing.

The State has not been entirely languid on this score. Through the Quimby-Marler Instructional Television Act of 1974, groundwork has been laid for increasing state support and evaluation of K-12 instructional programming. At the postsecondary level, various state agencies are beginning research leading towards some basic decisions. It is expected that this research will confirm numerous

studies showing that telecommunications is a cost-effective tool for meeting nontraditional needs. The Joint Committee on Postsecondary Education has contracted for a feasibility study of open learning in California, with plans for an in-depth study of how to use the media. Furthermore, the California Postsecondary Commission, just finishing up a difficult period of staffing, is mandated to investigate innovative educational programs. The Commission may be the logical spearhead for the future development of open learning.

The important point now is that the longer the State delays in taking positive action in this important area, the greater the waste will be in duplicative and piecemeal efforts. The best predictions are that education is beginning a process of radical change in the United States and that educational technology will of necessity figure prominently in the future system of higher learning. The State should begin plans now to use that technology wisely.

LEGISLATION

BACKGROUND

The earliest legislation in California relating to educational television occurred in 1953 during the first session after the FCC adopted the table of television channel allocations, which reserved specified channels for education. Six bills were introduced in the Senate and Assembly. All were held in committee. No educational television stations were then operating in the state, and public educational agencies were not authorized to spend any of their funds for television purposes. The first positive action came in 1957 with the approval of a bill that enabled public school districts and county superintendents of schools to enter into contracts providing for television broadcasts for use in the educational program of the schools.

In 1961, the State Television Advisory Committee and office of State Television Coordinator were established, and the Board of Trustees of the State Colleges was authorized to contract for facilities, operation, and provision of educational television. In 1963, the pilot program for what came to be known as the Farr-Quimby support program for elementary-secondary instructional television services was approved. In 1965, the formula contained in the pilot program was permanently adopted and in the same year the membership of the Television Advisory Committee was increased from

five to seven.

The first time a statewide Educational Television Commission was proposed to the Legislature was in the 1967 session, on recommendation of the Television Advisory Committee. The session closed before final action could be taken and the measure was introduced again in 1968, only to meet with the same fate. Similar legislation was introduced in 1972 and again in 1973. These measures were approved by the Legislature and vetoed by the Governor. In addition, during this period, in reorganization of state agencies by the Administration and as approved by the Legislature, the Television Advisory Committee and the office of the State Television Coordinator were abolished and their responsibilities were transferred to the Director of General Services.

One important piece of legislation was approved by the Legislature and signed by the Governor in the 1973-74 session. The Quimby-Marler Instructional Television Act provides for a new approach to the administration of elementary-secondary instructional television, making possible a substantially higher level of state support for that activity. The Act becomes effective on January 1, 1975.

In addition to the legislation specifically noted above, some fifty bills by a variety of authors were introduced during the twenty-year period, 1953-1973. The largest number came in the last ten years, and many dealt with CATV. The question of statewide regulation of CATV has challenged the

Legislature for some time and as of now, no satisfactory solution has emerged. We comment on this subject elsewhere in this report.

From the legislative history we conclude that, until the study, "An Assessment of the Instructional Television System in California" by the Joint Committee on Textbooks and Curriculum, which was completed in May of 1972, and the formation of the Joint Committee on Telecommunications in June of 1973, no real effort had been made to design a comprehensive legislative program. The major thrust of the instructional television study was at the elementary-secondary in-school level. The Quimby-Marler Instructional Television Act of 1974 is a direct product of that study. Post-secondary education; personnel training; public education in such fields as crime prevention, public health, social welfare and others; and delivery systems such as public television and radio, CATV, and ITFS are all of equal concern in the development of a public policy. Most of the previous legislation has dealt with single issues, each of which is an important part of the whole but difficult to deal with outside of the context of a state plan. Had there been such a plan, some of that legislation might have been successful.

RECOMMENDATIONS:

We make several recommendations for specific tasks the State should undertake to complete its analysis of public communications in California. These are included in our summary and recommendations. Here we set forth the principles

that should be basic to any legislative program. They are:

1. Federal government has declared a responsibility for support of public telecommunications but only on a matching basis. State and local governments should likewise declare their support for the enterprise, in addition to the support now provided for elementary-secondary televised instruction.
2. The consumer -- the individual citizen -- is the beneficiary of any communications system. The information received and the better-informed society that information produces is the substance of telecommunications. The process starts with the user rather than with the producer, and the major effort must be to increase the quantity and improve the quality of software.
3. Delivery systems are the means to an end. While there are indications that available channels of communication may soon be increasing many fold through CATV, the size of the resource is finite. It must be protected for future uses for the greatest benefit for the greatest number.
4. Government control of program content cannot be tolerated, which puts government in a very sensitive position. It is expected to provide financial support and coordination for both software and hardware and to assume administrative responsibility for some aspects of the latter -- but to stay uninvolved in the

substance of the system. Any structure that is devised must be carefully tuned to protect the consumer against possible manipulation by government.

5. Long-range financing and a dedicated source of the public funds that will be used to support public communications would remove much of the threat of government control. The establishment of a special fund in the State Treasury is indicated.
6. By government code, the determination of curriculum at all levels of formal education is mandated to appropriate agencies in the state. That responsibility, as well as the implementation of effective utilization and evaluation procedures cannot be assumed by others. The communications media serve as the means by which those agencies can become more effective.
7. The interests that will become involved in public communications cut across all segments of the society. Access to any system, or systems, by all of those interests must be protected. The state role, in addition to providing direct financial support, is to coordinate the communications facility to assure equitable access.

We can postulate general criteria almost ad infinitum. However, we believe the above describes the major concerns to be addressed as legislation is prepared. More meaningful for

the moment are the specific conclusions drawn from our research and contained in the chapter, "Summary and Recommendations." These conclusions form the basis for the following pieces of proposed legislation.

PUBLIC TELECOMMUNCATIONS ACT

The first is a revision of AB 493 which was approved by the Legislature in the 1973-74 session and subsequently vetoed by the Governor. It incorporates changes indicated by the committee study and some features of proposed legislation developed by the Assembly Science and Technology Council and the Association of California Public Television and Radio Stations. We believe this proposal meets the needs and protects the interest of the public broadcasters and, at the same time, gives direct support to other important segments of the public telecommunications enterprise. We expect some modifications will be made as further input is received after publication of this report.

Section 1. After investigation of the public interest associated with public telecommunications, the Legislature finds and declares that:

(a) Many of our citizens lack the opportunity to engage in self-improvement and professional advancement learning experiences.

(b) The general welfare of the people of the state will be promoted by delivering to them opportunities for new learning experiences, access to current developments

in public affairs, and exposure to our culture and heritage.

(c) The general economy will be helped by upgrading competency in the many professions that require periodic recertification.

(d) A significant trend toward the establishment of statewide programs in postsecondary education is developing and the availability of efficient public telecommunications systems is vital to the success of such programs.

(e) Public telecommunications systems in the state are barely adequate to serve the needs of the elementary and secondary schools of the state for their instructional television services.

(f) The use of public telecommunications as a primary mode of instruction by the public schools, colleges, and universities, and the application of public telecommunications by governmental agencies for manpower development, personnel inservice training, public education in crime prevention, social welfare, and other programs has a potential that has largely been unexplored in California.

(g) There is need for detailed planning in

connection with emerging public telecommunications systems to insure the most effective use of the limited number of channels of communications while providing full service to the people of California and the agencies that will use those facilities.

(h) The rapid growth of public telecommunications systems is leading toward inefficient utilization of these resources through lack of coordinated planning and duplication of effort.

(i) Failure to provide coordination of developing public telecommunications systems in the state can result in the waste of substantial sums of both public and private funds.

(j) The survival of public broadcasting in the state may depend on the development of a systematic state policy providing support for this enterprise.

(k) The high initial cost of telecommunications programs, and the requirement that such costs must be paid out of current annual budgets even though such programs may have a useful life of several years, places a serious restriction on the development of

high quality programs.

(l) Teachers are not being trained in the effective use of telecommunications which results in inferior teaching in many classrooms.

Section 2. As used in this chapter, the following definitions, unless the content otherwise requires, shall govern the construction of this chapter:

(a) "Public Telecommunications System" means all facilities used for non-commercial public and instructional broadcasting, including broadcast receivers, noncommercial educational television and radio stations; instructional television fixed service (ITFS); access channels of community antenna television (CATV) systems; any other cable television systems; broadcast translators; and other means of disseminating public telecommunications services, including interconnection systems whether by microwave, cable, satellite or other means, as required to distribute such public telecommunications services.

(b) "Public Telecommunications Services" means noncommercial, non-profit instructional and cultural material, including data and statistics related thereto, distributed by

public telecommunications or other systems to serve education and human development, including without limitation, uses for pre-school, elementary, secondary, higher and continuing education and for public information and cultural purposes.

(c) "Non-profit" means the use of public telecommunications facilities and public telecommunications services in such a manner as to assure that no part of the net earnings enures, or may lawfully enure, to the benefit of any private shareholder or individual.

(d) "Council" means the California Public Telecommunications Council created by this chapter.

(e) "Advisory Committee" means the California Telecommunications Advisory Committee created by this chapter.

(f) "Project" means the construction, improvement, maintenance and operation or acquisition in any manner of any public telecommunications facilities or the providing of public telecommunications services, or a combination thereof, including the production and acquisition of programs therefor; and technical assistance and state aid in

the utilization of such facilities and services.

Section 3. In order to develop and implement policies which ensure the orderly growth and the fullest use of public telecommunications to serve the public interest, there is hereby established in the state government the California Public Telecommunications Council. The Council shall be charged with developing and implementing a comprehensive state plan to assist non-profit educational broadcasting corporations and associations, departments, agencies and institutions of the State, educational agencies and institutions, local and regional governmental bodies and their departments, community non-profit organizations, and others engaged in the non-profit use of public telecommunications systems to provide public telecommunications services for the people of the State.

Section 4. The Council is expressly prohibited from exerting any control over the content of public telecommunications services and is required to establish procedures to guarantee that content shall be determined by originating agencies. The Council is further prohibited from owning or operating any broadcasting stations that transmit programs on assigned AM or FM radio

frequencies or VHF or UHF television channels to the general public.

Section 5. The Council shall consist of seven members appointed by the Governor with the consent of the Senate. Members shall represent the interests of telecommunications professionals and the citizens of the state who have demonstrated a commitment to the intent of this legislation and leadership in their fields of experience. Members shall have no direct affiliation, either as owner, employee or officially designated advisor, with any of the agencies eligible to receive state-aid grants under this chapter. No more than four members shall be of the same political party. Council members may be reappointed for one full term after the term of their original appointment.

Section 6. Terms of members shall be for seven years except for the members first appointed whose terms shall be determined by lot at the first official meeting of the council. Three members shall serve for seven years, two members shall serve for five years, and two members shall serve for three years.

Section 7. The Council shall elect its own officers, except the chairman who shall be appointed by the Governor. The term in office of the chairman

shall be for two years and all other officers shall serve for one year. Terms of officers shall run from July 1 of each year and all officers may be elected or appointed for succeeding terms.

Section 8. The Council shall hold public meetings at such places within the State as it shall designate, at least once quarterly and at such other times as in its judgment may be necessary,

Section 9. The members of the Council who are not public officials or public employees shall be compensated at a rate of one hundred dollars ($100) per day of service. All members of the Council, including members who are public officials or public employees, shall be reimbursed for their expenses in performing their actual and necessary travel duties.

Section 10. The powers and duties of the Council shall include, but not be limited to, the following:

(a) Adopt and, as necessary, amend and repeal suitable rules for the management of its affairs.

(b) Maintain a headquarters in Sacramento.

(c) Acquire such reports, make such inspections and investigations and prescribe such reasonable regulations as it deems necessary; to procure the temporary services of experts

or consultants or organizations thereof when such services are to be performed on a part-time or fee-for-service basis; to enter into agreements for the utilization of the facilities and services of other state departments, agencies and institutions, public or private.

(d) Apply for, accept on behalf of the State, and to deposit with the State Treasurer any grant, gift, or contribution made to assist in meeting the cost of carrying out the purposes of this chapter, and to expend the same for such purpose.

(e) Assist eligible applicants in planning, developing and operating a project and to grant and administer state aid therefor as permitted in this chapter.

(f) Develop and implement the comprehensive state plan referred to in Section 3 of this chapter and to promulgate rules and regulations for carrying out the purposes of this chapter, including reasonable standards and criteria for determining the eligibility of applicants for state aid as provided in this chapter, and the extent to which existing systems may be considered in determining the applicants share, if any, of the cost of a project.

(g) Maintain a center where current information regarding public telecommunications services and systems shall be kept and disseminated to interested agencies.

(h) Review applications for federal funds under Title 1 of the Public Broadcasting Act, and adopt such criteria as are necessary to judge the acceptability of such applications for federal funds.

(i) Minimize duplication of public telecommunications systems and encourage full utilization of existing systems before making grants to establish new systems.

(j) Encourage diversity of programming to allow for freedom, imagination, objectivity and initiative and to insure that public telecommunications systems shall not be misused for political or other propaganda purposes contrary to the Federal Constitution or the Constitution of the State of California.

(k) Accept applications for grants to assist those agencies included in Section 3 of this chapter to acquire, produce, or distribute public telecommunications services programs.

(l) Report annually to the Legislature and make recommendations to the Governor and the Legislature for changes as needed in fiscal

and other policies which will achieve the most effective use of public telecommunications.

Section 11. The Council shall appoint an executive director who shall devote his entire time to performance of his duties and who shall serve at the will of the Council. The executive director shall be the secretary of the Council and shall employ such staff as is authorized by the Council.

Section 12. Any gift, donation, bequest, grant or appropriation received pursuant to this chapter shall be deposited in the California Public Telecommunications Council Fund which is hereby created in the State Treasury. The money in the California Public Telecommunications Council Fund is appropriated without regard to fiscal years for purposes of this chapter. The Council may expend any money in the fund for any purpose related to the purposes of this chapter, including but not limited to making grants for projects approved by the Council, and for the purposes specified in any gift, donation, bequest, or grant made to the fund.

Section 13. On July 1, 1975, and on the first day of each fiscal year thereafter, an amount equal to forty cents ($.40) per California resident, as determined by the Department of Finance, shall be deposited in the California Public Telecommunications

Council Fund. Money in the fund shall be allocated for public telecommunications projects in accordance with the following formula:

(a) Twenty percent (20%) in grants of equal amounts to licensed public television stations in the state which are qualified to receive funds from the Corporation for Public Broadcasting, upon a satisfactory showing of their plans for community service and public affairs programming.

(b) Five percent (5%) in grants of equal amounts to licensed public radio stations in the state which are qualified to receive funds from the Corporation for Public Broadcasting, upon a satisfactory showing of their plans for community service and public affairs programming.

(c) Ten percent (10%) in grants to improve public telecommunications systems.

(d) Five percent (5%) in grants to provide matching funds required by the Educational Television Facilities program of the Department of Health, Education and Welfare.

(e) Thirty percent (30%) to establish and operate a statewide interconnection system with sufficient channel capacity to guarantee access by public television stations, public

radio stations, and other public telecommunications agencies without conflict as to hours or time of day of use.

(f) Five percent (5%) in a grant to the California Postsecondary Education Commission on a satisfactory showing that the Commission will dedicate these funds to the development of statewide instructional programming via telecommunications at the postsecondary level.

(g) Ten percent (10%) of the money received by the fund in the first year shall be placed in a revolving fund to underwrite the initial costs of programming for statewide distribution and to be reimbursed over time by the users of that programming through proceeds from such sources as rentals and tuition fees collected as programs are re-used in succeeding years. Additional money received by the fund may be placed in the revolving fund in succeeding years at the discretion of the Council.

(h) Five percent (5%) in grants to provide statewide coverage of state government.

(i) Five percent (5%) in grants to provide for programming on access channels on CATV and experimental delivery systems.

(j) Five percent (5%) reserved for administration.

If, on review of all applications for state support of Public Telcommunications projects, the Council finds that there will be excess funds in any of the above categories after all viable applications have been approved, it may at its own discretion transfer funds from one category to another, except that it may not increase funds set aside for administration during any fiscal year.

Section 14. The contribution by the State to the cost of any project shall not exceed such amount as may be determined by the Council. The State may hold title to any public telecommunications services programs produced with state funds provided by the Council and originals of such programs may be deposited with the Council. The Council shall be empowered to rent or sell public telecommunications services programs to which it holds title in accordance with Section 13 of this chapter.

Section 15. No part of the state appropriation for the cost of any project shall be made available by the Council unless and until the Council has satisfactory assurances that the necessary funds to finance the remaining cost, if any, of any such project have been or will be made available from sources other than state funds. In making the

determination of the applicant's share the Council may consider the values of existing or partially completed public telecommunications systems. In determining the amount of funds from sources other than state funds in or available to finance any project, the Council shall take into account the value of any building or space within any building and facilities thereof provided by agencies included in Section 3 of this chapter.

Section 16. Applications for projects for which state funds are requested shall be submitted to the Council in such form and manner as may be provided in the plan or regulations of the Council.

Section 17. The Council shall afford to every applicant for a project an opportunity for a fair hearing. If the Council, after affording reasonable opportunity for development and presentation of applications in the order of relative need, finds that a project application complies with the requirements of this chapter and is otherwise in conformity with the state plan, it may approve such application.

Section 18. The Council is authorized to make provision for a state public telecommunications interconnection system for the purpose of interconnecting public telecommunications facilities operated by

agencies included in Section 3 of this chapter, to determine the best methodology to be employed, to hold title to those facilities constructed or purchased with funds provided by the Council, and to pay the cost of building, maintaining, and operating such interconnection facilities so constructed or purchased, or the annual charge for use of such facilities where not so constructed or purchased.

Section 19. The Council shall appoint a California Telecommunications Advisory Committee of no more than twelve (12) members who shall serve at the pleasure of the Council and who shall broadly represent the agencies and interests engaged in the operation and use of telecommunications systems and who shall also represent the consumers of telecommunications services. The Advisory Committee shall meet as called by the Council and shall serve without pay. Advisory Committee members shall be reimbursed for their expenses in performing their actual and necessary travel duties.

Section 20. Nothing in this chapter shall be deemed to supersede the powers or responsibilities of any state agency or regional or local body except as expressly provided.

Section 21. The California Public Telecommunications Council

shall assume all powers and responsibilities previously held by the Television Advisory Committee and the Department of General Services under Section 14657 of the Government Code.

Section 22. Section 14657 of the Government Code is repealed.

Section 23. Article 8 (commencing with Section 14716) of Chapter 2 of Part 5.5 of Division 3 of Title 2, of the Government Code is repealed.

Section 24. This act shall become operative on July 1, 1975, and members of the Council shall be appointed no later than 60 days thereafter.

The following resolutions are designed to implement specific recommendations for legislative action regarding public radio and satellite communications.

RESOLUTION REGARDING PUBLIC RADIO PILOT PROJECT

WHEREAS, more than 16 million people in California live within the service areas of the 56 noncommercial public radio stations; and

WHEREAS, public radio has not flourished as it might have as a result of the attention given public television; and

WHEREAS, 18% of the public radio stations broadcast 365 days a year, many of them 24 hours a day; and

WHEREAS, the radio audience generally is not diminishing and new stations are coming on the air at frequent intervals; and

WHEREAS, certain kinds of program materials--such as music, public events, current news--are uniquely suited to delivery by radio; and

WHEREAS, radio can deliver appropriate program materials at comparatively lower cost than video distribution systems; and

WHEREAS, the resources available to public radio stations have been too limited to permit it to demonstrate what it can do; and

WHEREAS, there is need for definitive evidence as to effectiveness of radio as a delivery system of educational, cultural and public affairs programming; now, therefore, be it

RESOLVED that the California State Legislature conduct a pilot project involving at least two public radio stations serving audiences of a diverse character that will provide representative kinds of educational, cultural and public affairs programming over a period of one year, for the purposes of determining the most suitable kinds of programming for radio, the impact on audiences, and the dimension of need if the State should develop a statewide public radio delivery system.

RESOLUTION REGARDING SATELLITE COMMUNICATIONS

WHEREAS, communications via satellite has become a regular and normally accepted practice; and

WHEREAS, the development of new technology and the testing of low-cost equipment is producing significant

results; and

WHEREAS, California stands to benefit more than many other areas of the country in the use of satellites in its developing telecommunications systems; and

WHEREAS, a unique opportunity exists to gain important new insight into the potential of satellite communications; now, therefore, be it

RESOLVED that the California State Legislature establish immediate contact with NASA, H.E.W., private foundations, domestic satellite developers, and adjoining states to explore the possibility of designing a satellite project using ATS-6 after its experimental period in India. The lead-time required to design such a project is substantial, so early action is indicated.

RESOLUTION REGARDING INTERCONNECTION STUDY

WHEREAS, there is need to share the resources of production centers on a statewide basis; and

WHEREAS, there is need to increase the variety of programming being made available; and

WHEREAS, the present method of exchange of program material is inefficient and wasteful; and

WHEREAS, the potential increase in distribution systems will create greater demand for networking; and

WHEREAS, there is need for improvement in quality of programming which networking can facilitate; and

WHEREAS, there is expressed interest in coverage of

state government to be distributed statewide; and

WHEREAS, interconnection can be cost-effective;

now, therefore, be it

RESOLVED that the California State Legislature commission a detailed engineering study to establish the nature and cost of an interconnection system to serve public telecommunications systems in the state.

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Exhibit 1

PUBLIC HEARINGS

Eureka	October 10, 1973
Redding	October 31, 1973
San Diego	December 11 - 12 1973
San Francisco Bay Area (Burlingame)	February 22, 1974
Sacramento	March 15, 1974 March 29, 1974
Los Angeles	April 9, 1974
Central Valley Area (Visalia)	April 19, 1974
San Bernardino	May 17, 1974

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Academic Affairs and Dean for
Instructional Services
California State University, Chico

Mr. Henry Der
Project Director
Chinese Media Committee of Chinese
for Affirmative Action
San Francisco

Mr. William A. Furniss
Vice President and General Manager
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Coordinator
Office of Instructional
Services
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Santa Cruz

Dr. James L. Loper
President and General
Manager
KCET-TV
Los Angeles

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Consortium of the
California State
University and
Colleges
Los Angeles

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Pennsylvania Life Insurance
Company
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Dr. Armen Sarafian
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Pasadena City College
Pasadena

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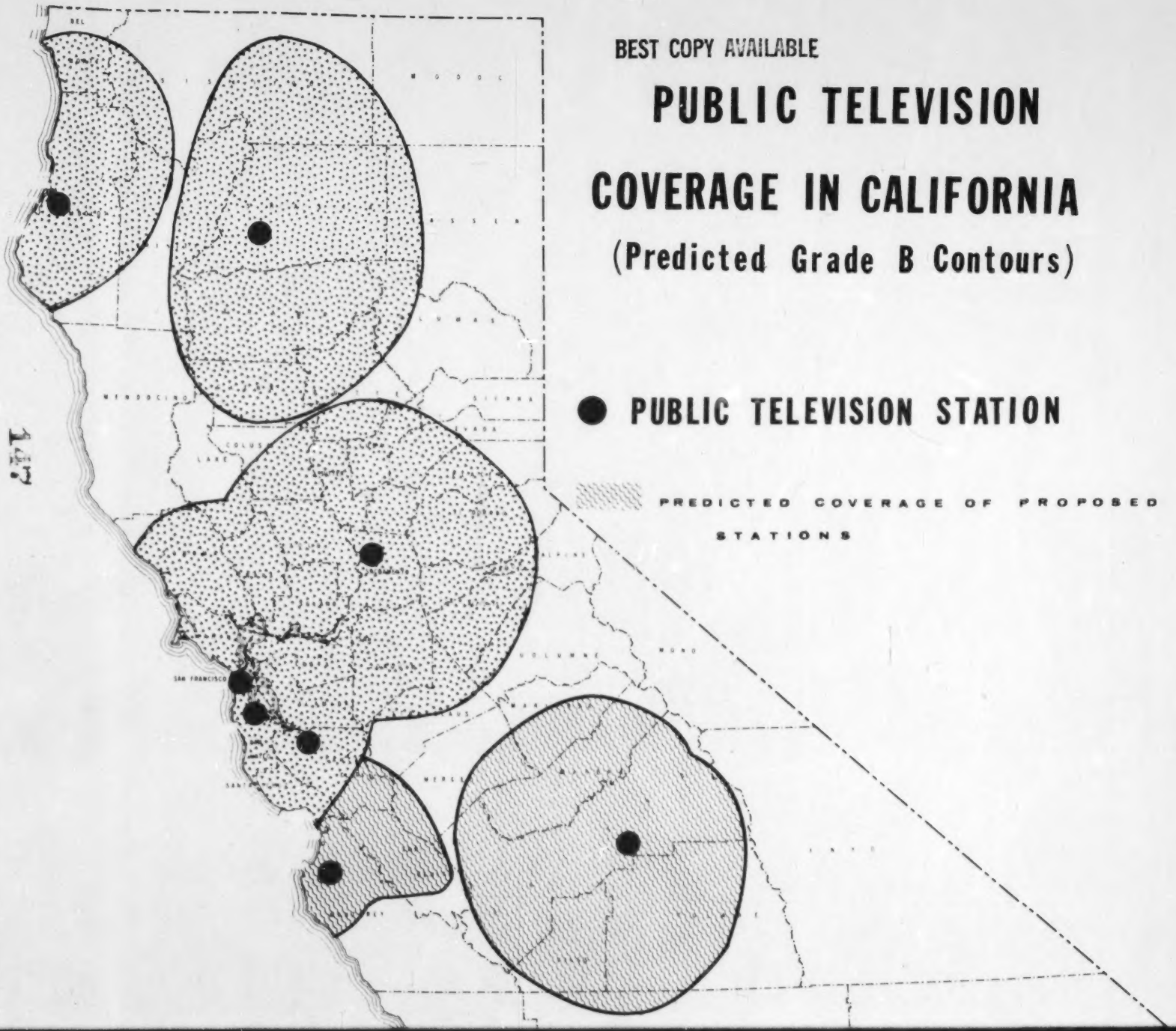
PUBLIC TELEVISION COVERAGE IN CALIFORNIA

(Predicted Grade B Contours)



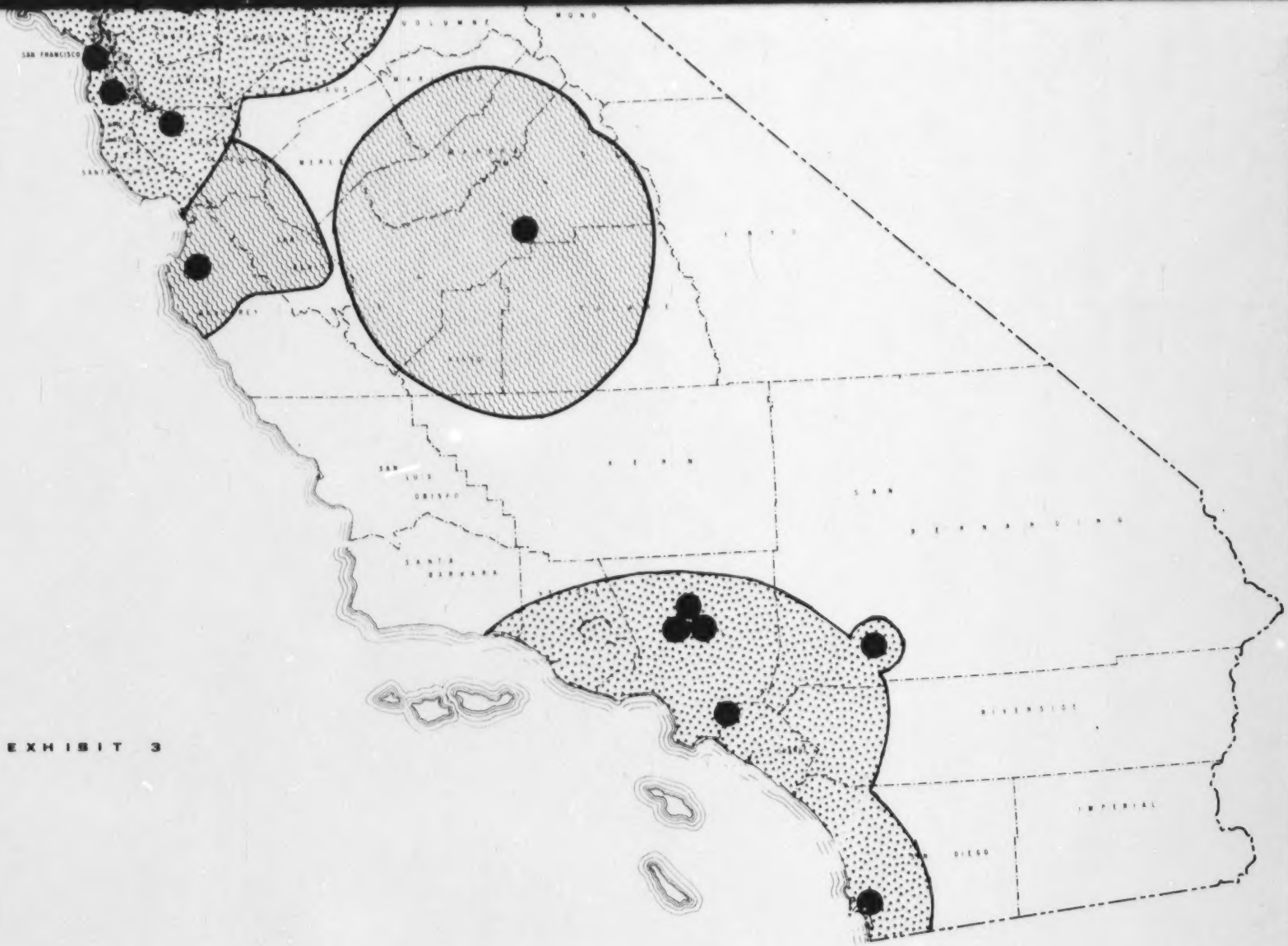


EXHIBIT 3

48

A 3

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PUBLIC TELEVISION SOURCE

STATE	NUMBER OF STATIONS	TOTAL INCOME	STATE GOV'T., DEPARTMENTS OF EDUCATION, COLLEGES AND UNIVERSITIES %	LOCAL DEPARTMENTS OF EDUCATION %	LOCAL GOV'T. AGENCIES %	ALL OTHER SOURCES %	INCOME PER CAPITA	STA
ALABAMA (Network)	9	$ 2,006,246	95	--	--	5	$ .54	NEVADA
ALASKA	2	992,605	82	--	--	18	2.49	NEW HAMP
ARIZONA	2	1,157,594	77	--	1	22	.46	NEW JERS
ARKANSAS	1	605,002	77	--	--	23	.23	NEW MEXI
CALIFORNIA	11	14,931,412	2	22	3	73	.01	NEW YORK
COLORADO	2	1,015,362	--	64	--	36	.002	NORTH CA
CONNECTICUT (Network)	3	2,144,173	63	2	--	35	.43	NORTH DA
DISTRICT OF COLUMBIA	1	5,176,401	4	2	--	94	.26	OHIO (Ne
FLORIDA	9	5,904,078	30	20	1	49	.24	OKLAHOMA
GEORGIA (Network)	10	3,900,674	83	14	--	3	.68	OREGON (
HAWAII (Network)	2	1,346,222	95	--	--	5	1.59	PENNSYLV
IDAHO	3	1,373,508	62	2	--	36	1.13	RHODE IS
ILLINOIS	4	5,018,798	19	8	--	73	.08	SOUTH CA
INDIANA	6	1,897,125	22	11	6	61	.08	SOUTH DA
IOWA (Network)	2	1,960,793	76	2	--	22	.51	TENNESSE
KANSAS	2	464,863	4	1	--	95	.007	TEXAS
KENTUCKY (Network)	14	3,531,904	71	18	--	11	.77	UTAH
LOUISIANA	2	831,793	8	5	--	87	.02	VERMONT
MAINE (Network)	5	1,266,108	57	--	1	42	.71	VIRGINIA
MARYLAND (Network)	2	4,808,195	94	--	--	6	1.10	WASHINGT
MASSACHUSETTS (Network)	2	8,854,602	1	--	--	99	.009	WEST VIR
MICHIGAN	6	5,135,604	55	5	4	36	.31	WISCONSI
MINNESOTA	4	2,085,435	7	14	--	79	.03	AMERICAN
MISSISSIPPI (Network)	7	2,572,630	80	--	--	20	.91	GUAM
MISSOURI	2	1,945,850	3	25	--	72	.01	PUERTO R
NEBRASKA (Network)	9	3,461,540	72	--	--	28	1.64	VIRGIN I

LEVISION SOURCES OF INCOME

EXHIBIT 4

STATE	NUMBER OF STATIONS	TOTAL INCOME	STATE GOV'T. DEPARTMENTS OF EDUCATION, COLLEGES AND UNIVERSITIES %	LOCAL DEPARTMENTS OF EDUCATION %	LOCAL GOV'T. AGENCIES %	ALL OTHER SOURCES %	INCOME PER CAPITA
NEVADA	1	$ 1,009,652	8	70	--	22	$ .15
NEW HAMPSHIRE (Network)	5	806,714	53	11	--	36	.55
NEW JERSEY (Network)	4	4,187,804	94	--	--	6	.53
NEW MEXICO	2	1,165,152	48	8	--	44	.51
NEW YORK (Network)	10	26,381,204	15	6	7	70	.24
NORTH CAROLINA (Network)	9	2,064,845	65	25	--	10	.25
NORTH DAKOTA	1	30,445	--	--	1	99	--
OHIO (Network)	10	7,852,731	34	8	1	57	.24
OKLAHOMA (Network)	3	655,948	29	60	--	11	.07
OREGON (Network)	2	724,087	91	--	--	9	.30
PENNSYLVANIA (Network)	7	9,071,167	23	11	4	62	.17
RHODE ISLAND	1	556,17[illegible]	94	--	--	6	.53
SOUTH CAROLINA (Network)	5	3,318,401	85	--	--	15	1.05
SOUTH DAKOTA (Network)	5	1,067,012	69	--	--	31	1.09
TENNESSEE (Network)	4	2,425,634	60	22	2	16	.36
TEXAS	7	5,299,832	10	14	--	76	.04
UTAH	2	1,437,642	52	--	--	48	.66
VERMONT (Network)	4	835,360	72	--	--	28	1.29
VIRGINIA	5	3,693,961	11	56	--	33	.09
WASHINGTON	6	3,089,958	13	50	--	37	.11
WEST VIRGINIA (Network)	3	2,294,102	66	11	--	23	.85
WISCONSIN	3	8,137,936	66	12	--	22	1.19
AMERICAN SAMOA	1	2,065,000	90	--	--	10	?
GUAM	1	276,449	--	2	88	10	?
PUERTO RICO	1	2,102,550	98	--	--	2	?
VIRGIN ISLANDS	1	423,572	--	--	95	5	?

NONCOMMERCIAL FM RADIO STATIONS

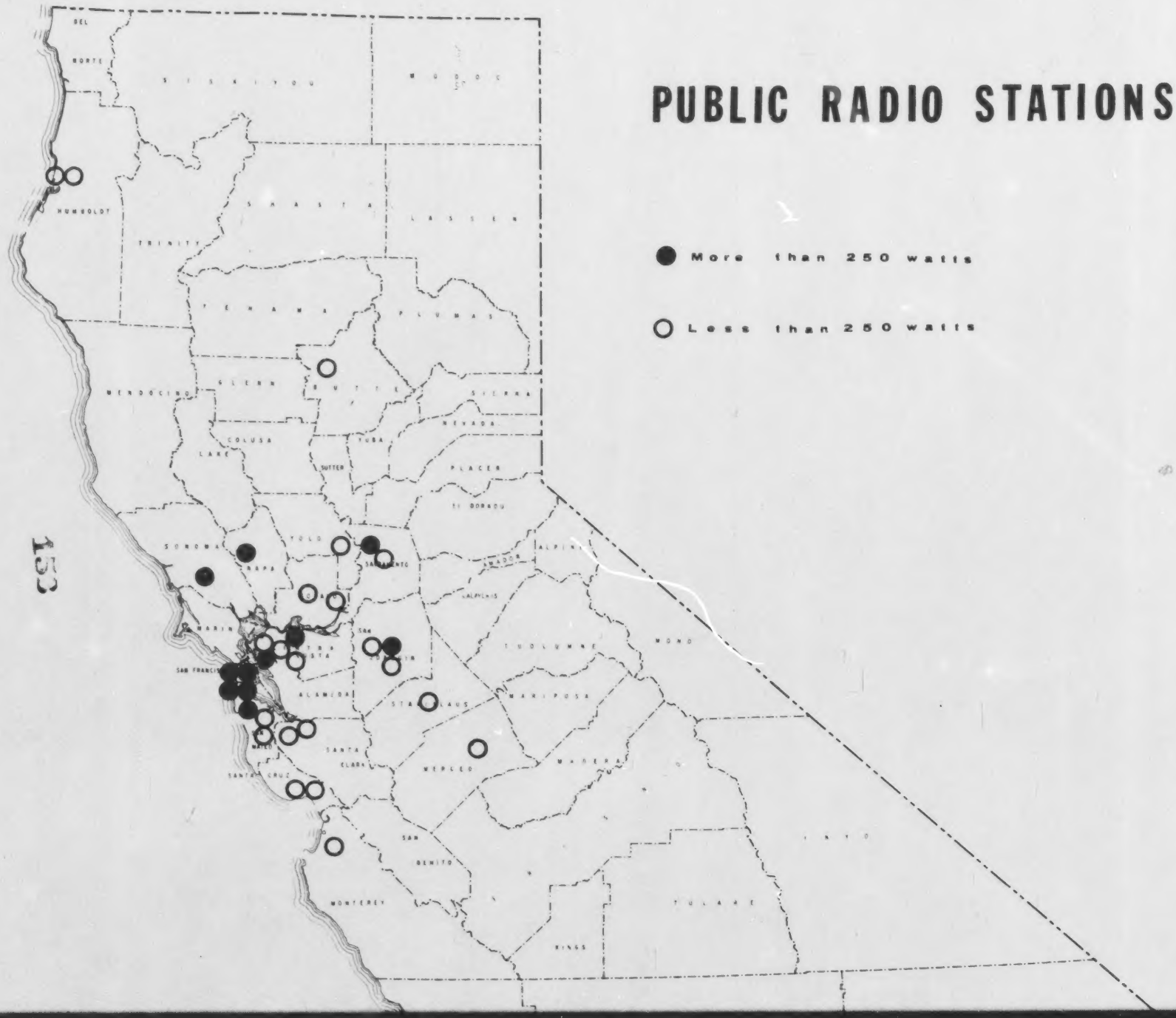
(More Than 250 Watts)

Location	Licensee	Call Letters	Power (Watts)
Angwin	Pacific Union College	KANG-FM	20,000
Berkeley	Pacifica Foundation	KPFA-FM	59,000
Claremont	Pomona College	KSPC-FM	3,000
Concord	Clayton Valley High School	KVHS-FM	5,200
El Cajon	Family Stations, Inc.	KECR-FM	2,000
La Sierra	La Sierra College	KSDA-FM	1,500
Long Beach	Long Beach Unified School Dist.	KLON-FM	1,250
Los Angeles	Loyola University	KXLU-FM	2,900
Los Angeles	Pacifica Foundation	KFPK-FM	110,000
Los Angeles	University of So. California	KUSC-FM	29,500
Northridge	Calif. State Univ. Northridge	KCSN-FM	3,000
Pasadena	Pasadena City College	KPCS-FM	3,850
Redlands	University of Redlands	KUOR-FM	700
Riverside	Loma Linda Univ. Brdcsting Co.	KLLU-FM KEMR-FM	1,400
Sacramento	Calif. State Univ. Sacramento	KERS-FM	5,400
San Bernardino	San Bernardino Valley College	KVCR-FM	4,900
San Diego	Calif. State Univ. San Diego	KPBS-FM	2,000
San Diego	San Diego Community College	KSOS-FM	841
San Francisco	San Francisco Unif. School Dist.	KALW-FM	3,300
San Francisco	University of San Francisco	KUSF-FM	1,450
San Francisco	KQED, Inc.	KQED-FM	110,000
San Francisco	Poor People's Radio, Inc.	KPOO-FM	250
San Luis Obispo	Calif. Polytechnic State Univ.	KCPR-FM	2,000
San Mateo	San Mateo Community College	KCSM-FM	350
Santa Monica	Santa Monica Unif. School Dist.	KCRW-FM	26,000
Santa Rosa	Bi-Lingual Brdcsting Federation	KBBF-FM	420
Stockton	University of the Pacific	KUOP-FM	30,000

NONCOMMERCIAL FM RADIO STATIONS

(Less Than 250 Watts)

Location	Licensee	Call Letters	Power (Watts)
Arcata	Arcata Union High School Dist.	KAHS-FM	12.5
Arcata	Calif. State Univ. Humboldt	KHSU-FM	10
Berkeley	University of California Berkeley	KALX-FM	10
Berkeley	Pacifica Foundation	KPFB-FM	150
Buena Park	Buena Park School District	KBPK-FM	10
Chico	Calif. State Univ. Chico	KCHO-FM	10
Cupertino	Assurance Science Foundation	KKUP-FM	42
Davis	University of California Davis	KDVS-FM	44
Elk Grove	Elk Grove Unified School Dist.	KEGH-FM	10
Irvine	University of California Irvine	KUCI-FM	10
La Canada	La Canada Unified School Dist.	KUNF-FM	10
Long Beach	Calif. State Univ. Long Beach	KSUL-FM	10
Los Altos	Foothill Community College	KFJC-FM	10
Manteca	East Union High School		10
Merced	Merced Community College	KBDR-FM	10
Modesto	Thomas Downey High School	KDHS-FM	10
Moraga	St. Mary's College	KSMC-FM	55
Rio Vista	River Delta Unified School Dist.	KRVR-FM	10
Riverside	Univ. of California Riverside	KUCR-FM	10
Salinas	Salinas Union High School	KAUG-FM	10
San Jose	Calif. State Univ. San Jose	KSJS-FM	85
Santa Barbara	Univ. of Calif. Santa Barbara	KCSB-FM	170
Santa Cruz	Univ. of Calif. Santa Cruz	KZSC-FM	10
Santa Cruz	Pataphysical Brdcsting Foundation	KUSP-FM	10
Stanford	Stanford University	KZSU-FM	10
Stockton	San Joaquin Delta College	KSJC-FM	18.6
Torrance	Torrance Unified School Dist.	KNHS-FM	10
Travis AF Base	Vanden High School	KVIK-FM	36
Walnut	Mt. San Antonio College	KSAK-FM	10


PUBLIC RADIO STATIONS
More than 250 watts
Less than 250 watts
DEL NORTE
HUMBOLDT
SISKIYOU
MODOC
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
NEVADA
COLUSA
LAKE
SUTTER
YUBA
PLACER
EL DORADO
SONOMA
NAPA
YOLO
SACRAMENTO
AMADOR
ALPINE
CALAVERAS
MARIN
SAN FRANCISCO
SAN MATEO
TUOLUMNE
MONO
ALAMEDA
STANISLAUS
MARIPOSA
SANTA CLARA
SANTA CRUZ
MERCED
MADERA
SAN BENITO
MONTEREY
TULARE
KINGS

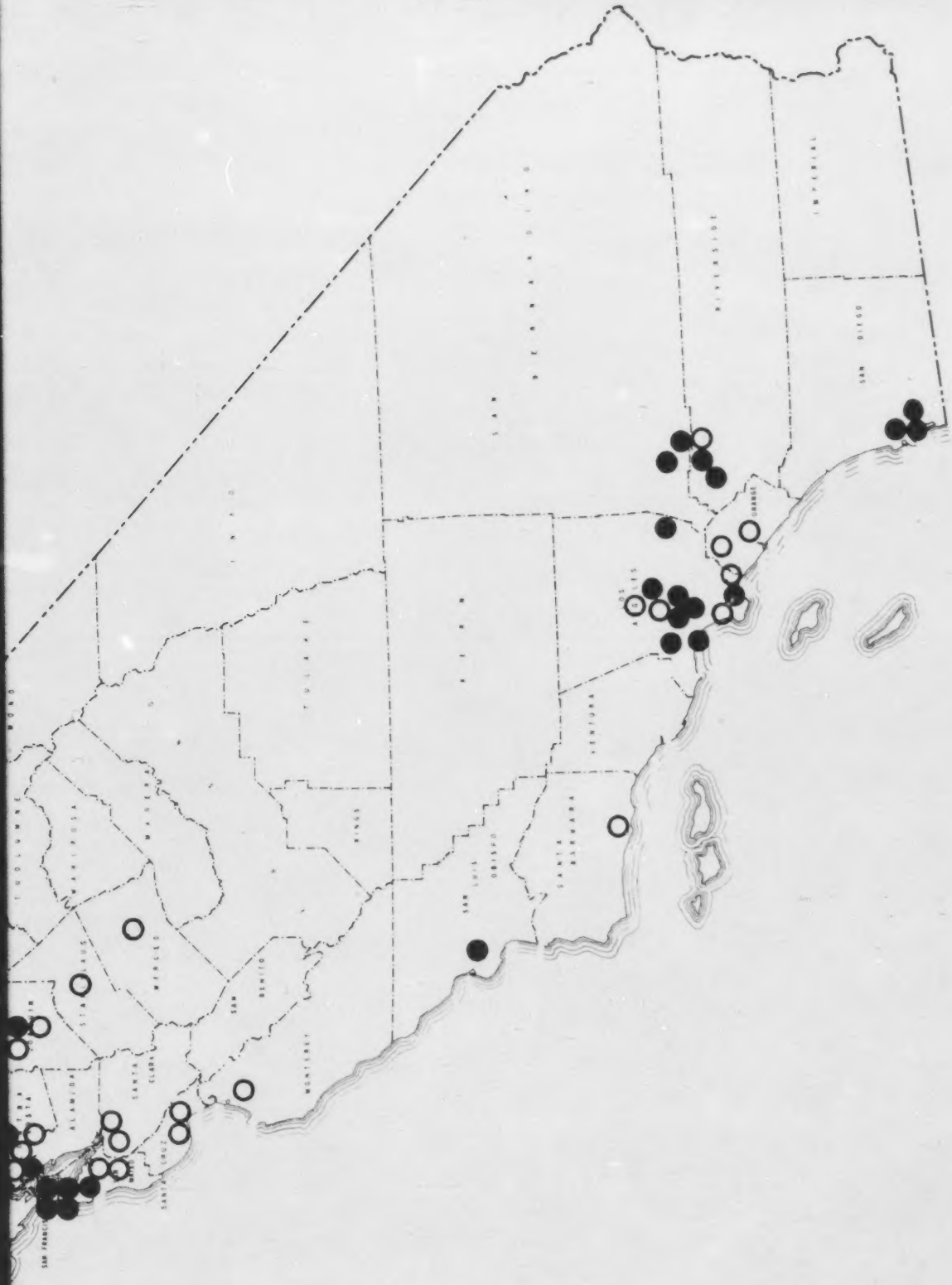


Exhibit 6

TRANSLATOR STATIONS

REPEATING PUBLIC TELEVISION STATIONS

A. Areas receiving KIXE, Redding, via translators.

Area	County
Alturas	Modoc
Alturas-Canby	Modoc
Big Bend-Bush Bar	Shasta
Cedarville-Eagleville-Lake City	Modoc
Chester-Greenville-Susanville-Westwood	Lassen-Plumas
Fort Bidwell-Lake City	Modoc
Litchfield-Susanville	Lassen
Shasta Valley-Yreka	Siskiyou
Tule Lake-Newell	Siskiyou-Modoc
Weed	Siskiyou
Etna-Fort Jones	Siskiyou
Weaverville	Trinity
Hayfork	Trinity

B. Areas receiving KVIE, Sacramento, via translators.

Area	County
Bridgeport-Lee Vining	Mono
Conway Summit-Mammoth School	Mono
Fern Creek-June Lake	Mono
South Lake Tahoe	El Dorado

C. Areas receiving KQED, San Francisco, via translators.

Area	County
Aromas	Monterey
Bass Lake-North Fork	Madera
Big Sur	Monterey
Bradley-San Ardo	Monterey
Gonzales	Monterey
Hollister-San Juan Bautista	Monterey
Ukiah	Mendocino
Mt. Bullion-Mariposa	Mariposa
Salinas-Castroville-Seaside-Pacific Grove-Marina-Moss Landing-Prunedale	Monterey
Oakhurst	Madera
Fresno	Fresno

D. Areas receiving KTEH, San Jose, via translators.

Area	County
Bradley-San Ardo	Monterey
Gilroy-Morgan Hill	Santa Clara
Gonzales-Soledad-Greenfield	Monterey
Hollister	San Benito
Salinas-Monterey	Monterey

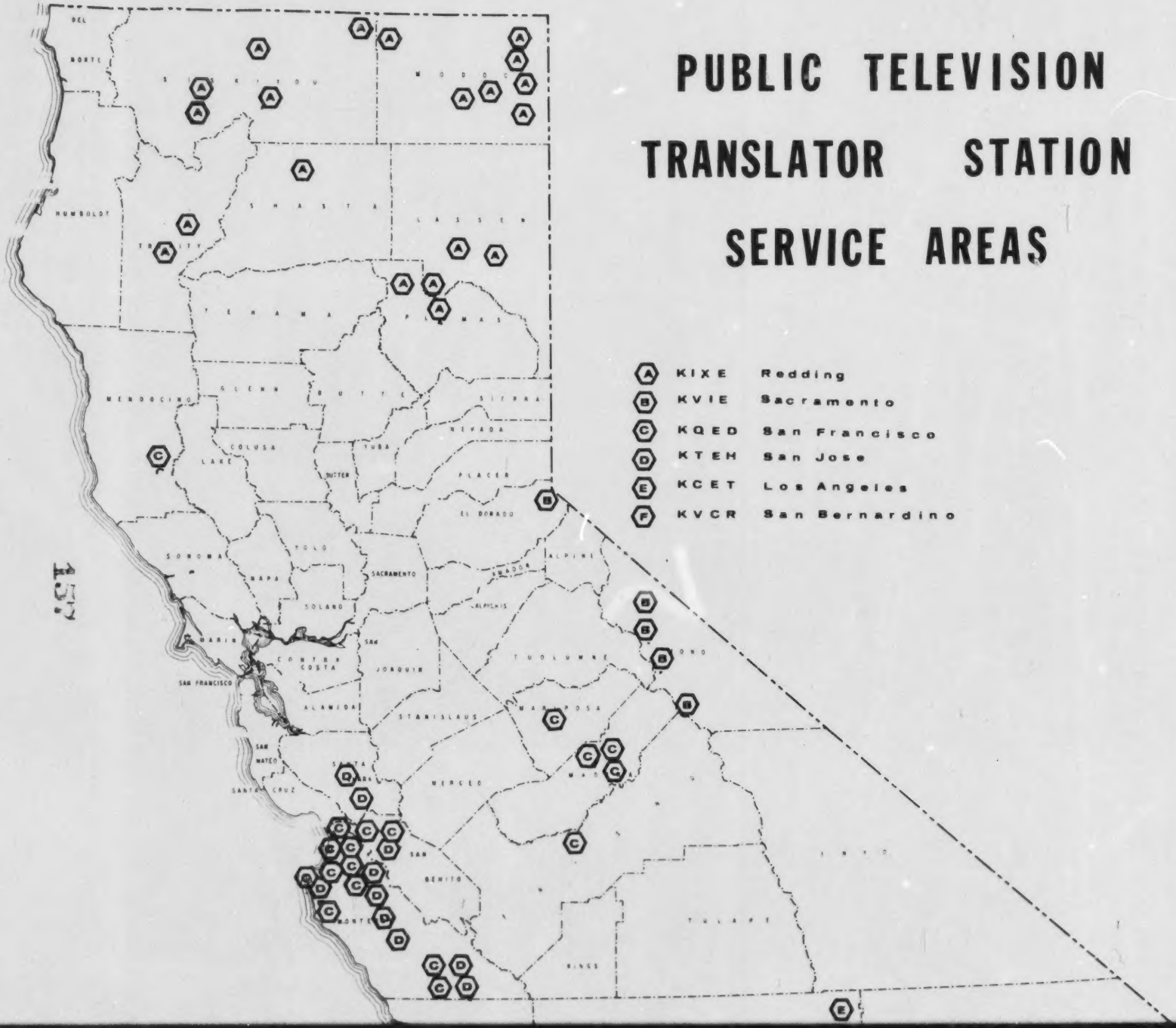
E. Areas receiving KCET, Los Angeles, via translators.

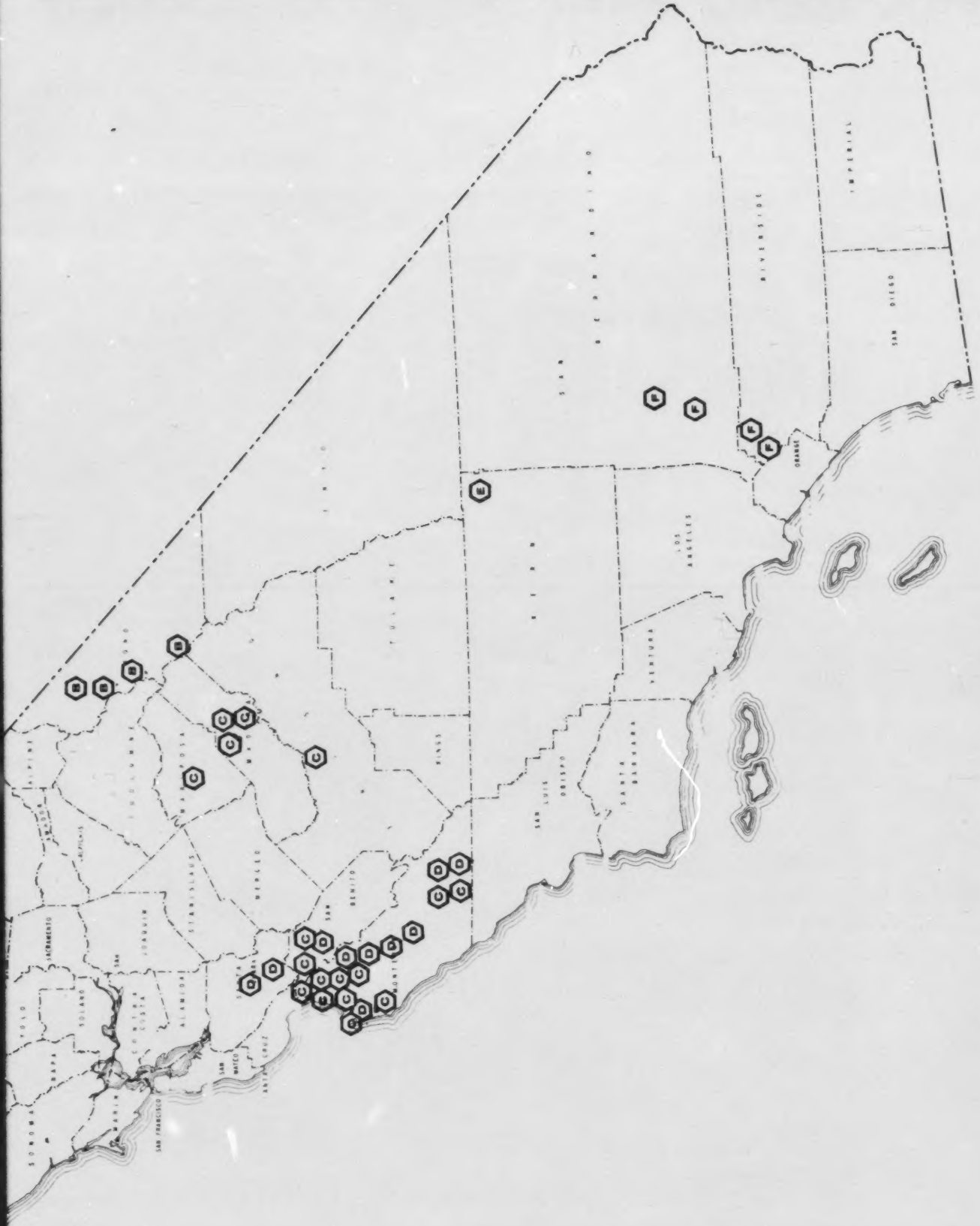
Area	County
China Lake-Ridgecrest	Kern

F. Areas receiving KVCR, San Bernardino, via translators.

Area	County
Big Bear Lake-Lake Arrowhead-Crestline	San Bernardino
Riverside-Rubidoux-La Sierra-Coloma	Riverside
Victorville	San Bernardino

PUBLIC TELEVISION TRANSLATOR STATION SERVICE AREAS




SAN BERNARDINO
RIVERSIDE
IMPERIAL
SAN DIEGO
ORANGE
LOS ANGELES
VENTURA
SANTA BARBARA
SAN LUIS OBISPO
KINGS
TULARE
KERN
MONTEREY
SAN BENITO
MERCED
STANISLAUS
CALAVERAS
AMADOR
SACRAMENTO
SOLANO
NAPA
SONOMA
SAN FRANCISCO
SAN MATEO
SANTA CRUZ
A 10

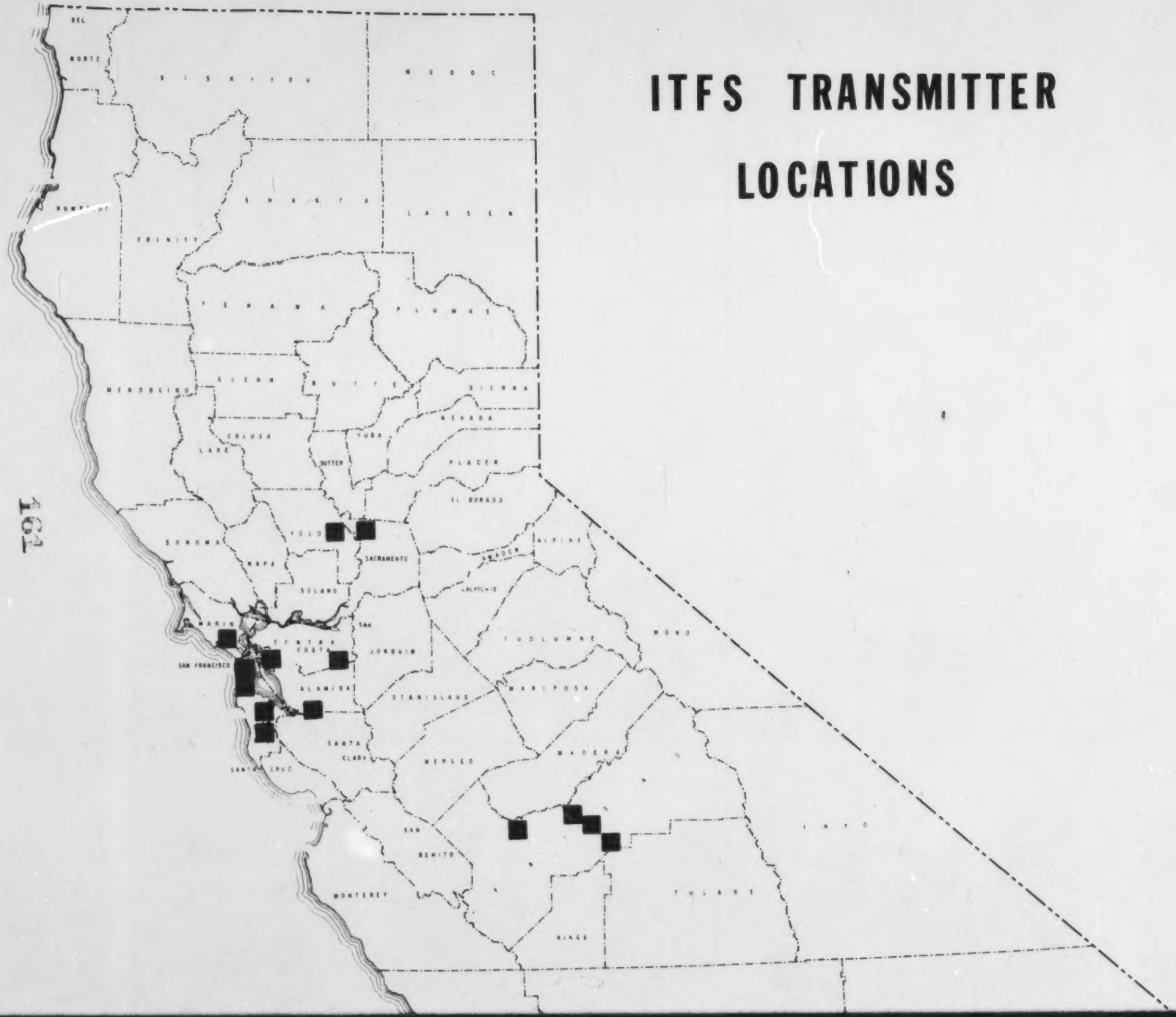
INSTRUCTIONAL TELEVISION FIXED SERVICE

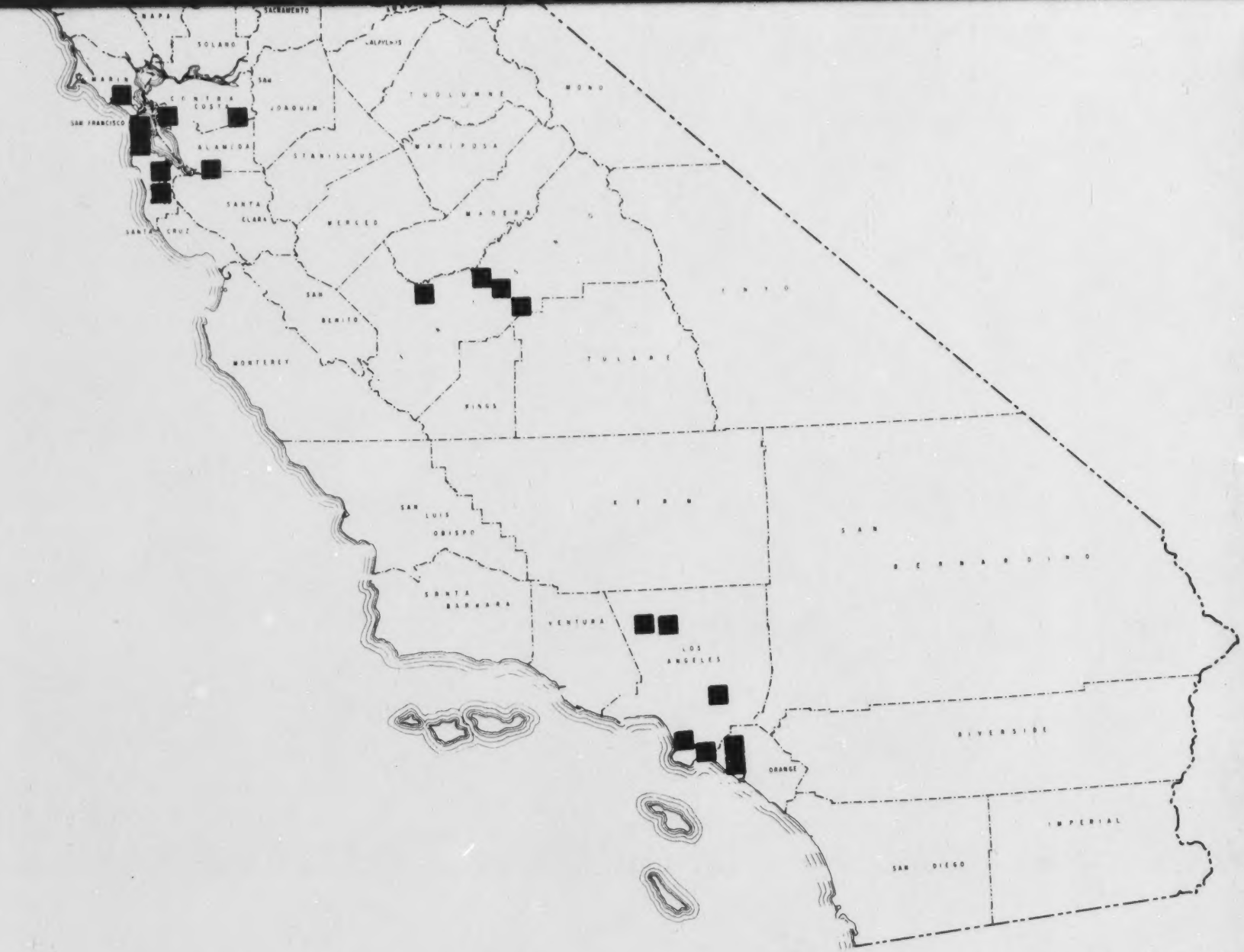
(ITFS - 2500 Megahertz)

Licensee	Location	Channels (including studio-transmitter links)	Receiving Points
Anaheim City School District	Anaheim	8	22 schools
Fresno County Schools	Fresno	4	167 schools
	Reedley	2	
	Sanger	2	
	Tranquility	2	
Long Beach Unified School District	Long Beach	4	77 schools
Pasadena Unified School District	Pasadena	4	29 schools
Roman Catholic Diocese	Los Angeles Area (Mt. Wilson)	8	92 schools
	Menlo Park	4	58 schools
	San Bruno Mt.	4	
	Mt. Tamalpais	4	
	Monument Park	4	
Santa Ana Unified School District	Santa Ana	8	33 schools
Stanford University	Los Altos	4	10 industries
Torrance Unified School District	Torrance	4	35 schools
University of California	Berkeley	1	?
	Brushy Ridge	1	1 cable system 1 laboratory

Licensee	Location	Channels (including studio-transmitter links)	Receiving Points
University of California, Cont'd	Davis	1	1 hospital
	Sacramento	1	1 state agency
	Moffitt Hospital San Francisco General Hospital	2	10 hospitals
University of Southern California	Los Angeles	8	10 industries

ITFS TRANSMITTER LOCATIONS




SACRAMENTO
NAPA
SOLANO
CALAVERAS
MARIN
CONTRA COSTA
SAN JOAQUIN
TUOLUMNE
MONO
SAN FRANCISCO
ALAMEDA
STANISLAUS
MARIPOSA
SANTA CLARA
MERCED
MADERA
SANTA CRUZ
SAN BENITO
INYO
MONTEREY
TULARE
KINGS
SAN LUIS OBISPO
KERN
SAN BERNARDINO
SANTA BARBARA
VENTURA
LOS ANGELES
RIVERSIDE
ORANGE
IMPERIAL
SAN DIEGO

A 13

BEST COPY AVAILABLE

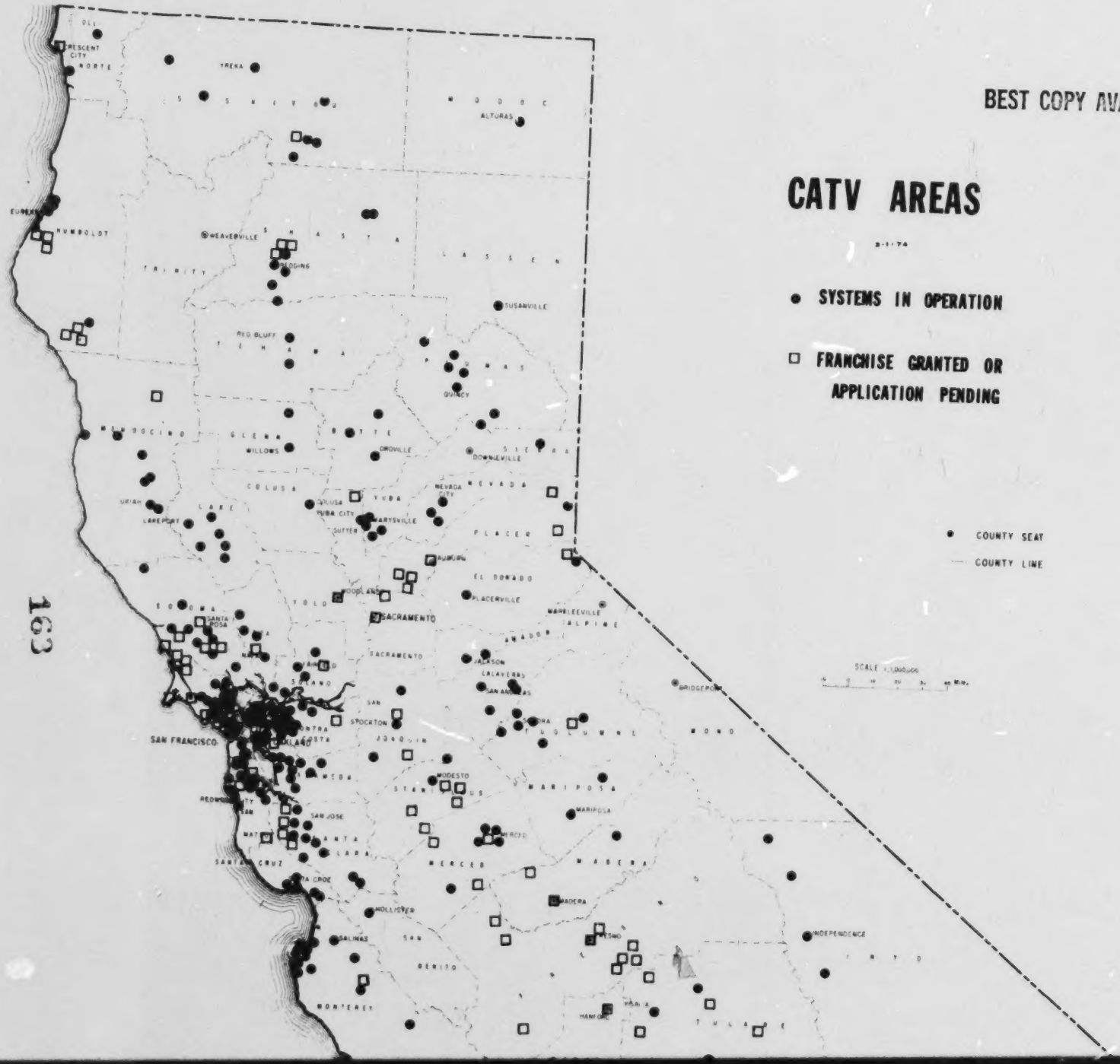


EXHIBIT 8

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COUNTY	POPULATION 1/1/74	POPULATION IN AREAS WITH CABLE	POPULATION-NO CABLE YET	POPULATION-FRANCHISES PENDING	POPULATION-NO CABLE PLANNED	TOTAL SUBSCRIPTIONS	PERCENT POPULATION WITH NO CABLE
ALAMEDA	1,098,000	921,794	176,206	10,917	165,289	48,780	15.05
ALPINE	650	0	650	0	650	0	100.00
AMADOR	14,650	2,432	12,218	0	12,218	675	83.40
BUTTE	114,300	42,620	71,680	0	71,680	14,760	62.71
CALAVERAS	15,350	3,274	12,076	0	12,076	550	78.67
COLUSA	12,450	3,842	8,608	0	8,608	862	69.14
CONTRA COSTA	590,100	449,957	140,143	27,839	112,304	112,824	19.03
DEL NORTE	15,700	0	15,700	5,070	10,630	0	67.71
EL DORADO	53,500	19,337	34,163	0	34,163	6,764	63.86
FRESNO	438,700	0	438,700	220,732	217,968	0	49.68
GLENN	18,350	6,969	11,381	0	11,381	1,778	62.02
HUMBOLDT	102,800	33,322	69,478	8,972	60,506	4,623	58.86
IMPERIAL	80,600	51,408	29,192	0	29,192	11,200	36.22
INYO	17,150	6,929	10,221	0	10,221	3,352	59.60
KERN	340,900	171,544	169,356	7,629	161,727	7,666	47.44
KINGS	68,500	3,035	65,465	20,428	45,037	710	65.75
LAKE	22,950	18,810	4,140	0	4,140	3,700	18.04
LASSEN	17,750	6,912	10,838	0	10,838	1,700	61.06
LOS ANGELES	6,941,000	4,570,533	2,370,467	800,609	1,569,858	100,098	22.62
MADERA	44,900	5,852	39,048	20,393	18,655	300	41.55
MARIN	215,500	143,228	72,272	5,522	66,750	36,457	30.97
MARIPOSA	7,175	1,250	5,925	0	5,925	383	82.58
MENDOCINO	54,200	40,449	13,751	1,504	12,247	7,326	22.60
MERCED	117,500	48,794	68,706	5,289	63,417	6,462	53.97
MODOC	3,475	2,799	5,676	0	5,676	983	66.97
MONO	7,025	0	7,025	0	7,025	0	100.00
MONTEREY	258,600	170,393	88,207	2,608	85,599	38,001	33.10
NAPA	87,100	43,365	43,735	250	43,485	4,856	49.93
NEVADA	31,000	10,000	21,000	1,392	19,608	2,600	63.25
ORANGE	1,646,300	247,924	1,398,376	694,883	703,493	29,440	42.73

CALIFORNIA CATV BY COUNTY
JUNE, 1973

CENT ATION CABLE	COUNTY	POPULATION 1/7/74	POPULATION IN AREAS WITH CABLE	POPULATION NO CABLE YET	POPULATION- FRANCHISES PENDING	POPULATION NO CABLE PLANNED	TOTAL SUBSCRIPTIONS	PERCENT POPULATION WITH NO CABLE
15.05	PLACER	89,400	0	89,400	30,704	58,696	0	65.66
100.00	PLUMAS	13,500	7,572	5,928	0	5,928	3,035	43.91
83.40	RIVERSIDE	507,800	172,201	335,599	25,805	309,794	42,719	61.01
62.71	SACRAMENTO	682,100	0	682,100	0	682,100	0	100.00
78.67	SAN BENITO	19,500	7,663	11,837	0	11,837	455	60.70
69.14	SAN BERNARDINO	699,700	345,218	354,482	101,149	253,333	58,812	36.21
19.03	SAN DIEGO	1,502,600	1,104,313	398,287	169,450	228,837	111,749	15.23
67.71	SAN FRANCISCO	675,600	675,600	0	0	0	28,400	100.00
63.86	SAN JOAQUIN	300,100	152,360	147,740	16,781	130,959	7,300	43.64
49.68	SAN LUIS OBISPO	121,500	77,014	44,486	3,642	40,844	15,317	33.62
62.02	SAN MATEO	571,100	397,915	173,185	85,950	87,235	40,879	15.27
58.86	SANTA BARBARA	275,600	199,124	76,476	3,145	73,331	56,002	26.61
36.22	SANTA CLARA	1,167,000	733,505	433,495	165,981	267,514	73,491	22.92
59.60	SANTA CRUZ	143,500	65,992	77,508	0	77,508	5,822	54.01
47.44	SHASTA	86,000	37,115	48,885	2,831	46,054	12,300	53.55
65.75	SIERRA	2,720	945	1,775	0	1,775	236	65.26
18.04	SISKIYOU	35,200	13,249	21,951	2,163	19,788	2,913	56.22
61.06	SOLANO	181,900	107,674	74,226	0	74,226	19,995	40.81
22.62	SONOMA	235,100	97,418	137,682	6,630	131,052	35,444	55.74
41.55	STANISLAUS	210,400	82,330	128,070	29,678	98,392	27,840	46.76
30.97	SUTTER	44,900	32,539	12,361	2,645	9,716	12,459	21.64
82.58	TEHAMA	31,650	11,249	20,401	0	20,401	6,133	64.46
22.60	TRINITY	8,925	0	8,925	0	8,925	0	100.00
53.97	TULARE	201,900	47,283	154,617	30,800	123,817	1,000	61.33
66.97	TUOLUMNE	26,100	11,101	14,999	0	14,999	2,700	57.47
100.00	VENTURA	426,100	323,328	102,772	0	102,772	37,190	24.12
33.10	YOLO	103,600	0	103,600	20,677	82,923	0	80.04
49.93	YUBA	44,750	27,509	17,241	0	17,241	0	38.53
63.25								
42.73	TOTALS	20,849,420	11,756,989	9,092,431	2,532,068	6,560,363	1,049,041	31.47

A SUMMARY OF F.C.C. CABLE REGULATIONS

The timetable below shows how the Federal Communication Commission's role in CATV has evolved in the last 15 years.

1959 F.C.C. decided that it did not have jurisdication over cable TV. Sharp Congressional reaction to this decision caused the Commission to reverse itself and to claim authority at least over cable systems which used microwave relays.

1962 Commission ruled on individual cases involving such relays, and its authority to do so was upheld by the courts.

1965 F.C.C. issued "The First Report and Order," containing rules for all cable systems using microwave.

1966 F.C.C. issued "The Second Report and Order," asserting the Commission's authority over all types of cable systems, microwave or not, applied rules of First Order to all systems, and added some new rules. Commission authority was again upheld by the courts.

1968 Commission issued "Notice of Inquiry and Proposed Rule-making," containing proposed new rules and numerous questions about the future of CATV: "Notice" also requested comments from concerned parties.

1970 Commission issued "Second Further Notice of Proposed Rule-making," which added new rules to previous notice. Commission also initiated four rule-making proceedings and held nationally televised public hearings in the spring of 1971.

1972 Rules coming out of previous public hearings were issued.

1974 Commission issued "Clarification of Rules and Notice of Proposed Rule-making," which provides more detailed explanations of existing rules and suggests new rules.

Federal regulation currently covers the following general areas:

1. Franchise standards. Significant construction on the pro-

posed system must begin within one year of F.C.C. certification of the local franchise. The initial franchise period will not exceed 15 years. There must be an established procedure for the resolution of subscriber complaints at the local level. The franchising authority may charge an annual fee of no more than 3% of the cable company's gross subscriber revenues, unless the local regulatory program justifies a larger fee. Under no circumstances may the franchising authority charge greater than 5%.

2. Signal carriage. Although the requirements here are rather complex, their gist is that a cable system must carry all local broadcast stations, including noncommercial educational stations. A system may carry from one to three independent stations, depending on the size of the commercial TV market in which the system operates. The outside independent stations carried must be those closest to the community the system serves. A cable operator may import a distant signal if it is necessary for providing all three networks. Any non-English or noncommercial educational station may be carried.

3. Program exclusivity. A cable operator may not show a network program on a distant channel which is being broadcast simultaneously by a local station, if the local broadcaster so requests. No cable system shall carry a syndicated program for one year from the date the program was licensed or sold.

4. Channel capacity. All systems in the top 100 markets must have a twenty-channel capacity by March 31, 1977. These systems must also have the potential for two-way communication by that date.

5. Origination cable casting. All systems with 3,500 or more subscribers must do a certain amount of local origination on a specifically designated channel. This requirement, however, is not currently being enforced by the Commission. All systems in the top 100 markets must provide four channels in addition to those used for broadcast signals and their own originations: a free public access channel (including minimum facilities for program production), an educational access channel, a local government access channel, and a leased access channel.

6. Cross-ownership. No cable system may carry broadcast signals if the system owns or has an interest in a national TV network, a TV station whose broadcast area overlaps with the cable system's service area or a TV translator station licensed to the community of the system.

7. Technical standards. Specific standards of picture quality and system dependability are required of cable systems.

The above summary indicates that virtually all crucial areas of cable operation are a matter of federal jurisdiction. At the same time, practically all federal rulings are still being debated by the cable industry, the broadcast industry, representatives of state and local government, and independent groups interested in telecommunications. Many of the current regulations will undoubtedly see further revision before the controversy is settled. The F.C.C. is now beginning "re-regulation" in response to previous ambiguities and to the many objections to current rulings.

STATE	STRUCTURE	DUTIES	
Alaska	-CATV falls under Public Utilities Commission. -3 members appointed by Governor. -Term...6 years.. 1973.	-Regulate public utility (CATV) inside the state. -Investigate rules and regulations of public utility and hold hearings. -Require reasonable rates for a public utility. -Regulate the service and safety of operations of CATV. -Require public utility to file report.	-Ad no wi ex po pe es -Ad go ti du -Co ad ce of -Ma po ti st su
Arizona	-Regulatory legislation has either died in committee or on the floor.		
Arkansas	-No regulation or attempt to do so.		
Colorado	-No regulation.		
Connecticut	-CATV must obtain a certificate from the Public Utilities Commission certifying that public convenience and necessity require the operation of such a service within the territory specified in such certificate.		

TELEVISION REGULATION IN OTHER STATES

	POWERS	FUNDING	GENERAL PROVISIONS
e. es ty gs. ble lic r- f	-Adopt regulations, not inconsistent with the law, to exercise its powers and to perform its duties. -Adopt regulations governing practice and procedure. -Commission may administer oaths, certify to all official acts. -May issue subponeas and petition a court of state to enforce subpoenas.		-Commission may appear anywhere in state involving public utility. -Examine witnesses and offer evidence in any proceeding affecting the state. -Furnishing telecommunications service to public for compensation.

STATE	STRUCTURE	DUTIES	
Delaware	-No regulation. Legislation has either died in committee or on floor.		
Florida	-No regulation. Statute authorizing counties to grant non-exclusive franchises. Bill died in committee.		
Georgia	-No regulating laws. Bill is pending for next session of General Assembly, January, 1974.		
Hawaii	-Department of Regulatory Agencies; Cable Television Division. -CATV Advisory Committee. -5 members appointed by Governor to serve without compensation.	-Fix time and place for hearing on CATV permit. -Conduct irvestigations and hearings for permit. -Prescribe service and safety specifications. -Require CATV to submit a schedule of rates. -May receive complaint by any person as to the operation of a CATV system.	-May perm hear -Dete or n perm issu -May poen atte witn -Hold -Admi -Exam -Regu and hear -Make deci agen -May rule tion sary

POWERS	FUNDING	GENERAL PROVISIONS
-May renew CATV permit after hearing. -Determine whether or not a CATV permit must be issued. -May issue subpoenas requiring attendance of witnesses. -Hold hearings. -Administer oaths. -Examine witnesses. -Regulate conduct and course of hearing. -Make recommended decision to agency. -May promulgate rule and regulations as necessary.	-5% of estimated gross income for 1st calendar year of $5,000 whichever is greater. After first year, the 1st day of the months of July and December of each year 2.5% of gross income or $2,500, whichever is greater.	-Issuance of CATV permits. -Require each company to provide safe service. -Require each company to submit a schedule of rates and conditions as the director prescribes. -Categorize CATV as to method of operation. -Identify requirements for designation of service area. -May terminate CATV company

STATE	STRUCTURE	DUTIES
Idaho	-No statewide regulation; CATV systems have been franchised by individual cities.	
Illinois	-Efforts to assert regulation of CATV by Illinois Commerce Commission rejected by Illinois Supreme Court.	
Iowa	-No state regulation. -Bills have died in committee. -Starting July 1, 1974, cities may grant to any person a franchise for CATV.	
Kentucky	-1972 General Assembly considered one measure concerning CATV regulation. Died in committee.	
Massachusetts	-CATV Commission. 7 members appointed by Governor for a term coterminous with that of Governor. -Governor shall appoint chairman. -Commission shall appoint executive director.	-Chairman shall preside at all hearings and shall designate a member to act in his absence. -To establish hearings for the licensee of a CATV. -Study rate regulation. -Cause notice of time and place of hearing to be known. -May visit all CATV companies to ascertain if rules have been complied with.

POWERS	FUNDING	GENERAL PROVISIONS
- gs .	-May make, alter, or amend rules and regulations and enforce the application of fixed rates. -Issue subpoenas to compel the attendance of witnesses. -Administer oaths to persons whose testimony is required. -May employ expert assistance as it deems necessary.	-Requires franchising by municipalities. -Requires each CATV company to provide for safe and reliable services. -Requires the approval by the commission for a renewal. -Requires that a CATV system shall provide a cable drop along its routes at no cost to public schools and other public buildings.

STATE	STRUCTURE	DUTIES
Massachusetts, Continued		-D a i t s l
Mississippi	-Public Service Commission has implied grant of authority under Statutory Code with effective date of November 1, 1973.	
Missouri	-No regulation in any manner.	
Montana	-Regulatory legislation passed by the 1949 or 1951 Legislature and vetoed by the Governor.	
Nebraska	-Counties authorized to regulate CATV systems and levy taxes on operators (1971).	
Nevada	-Public Service Commission has been regulating CATV companies since 1970. No formalized method used except by the inference of the subscribers.	

POWERS	FUNDING	GENERAL PROVISIONS
-Discretionary authority to get into rate regulation after 3 year study - Nov. 16, 1974.		-No license shall be granted until the issuing authority has held a public hearing. -Complaints as to the operation of a CATV company may be filed in writing with Commission.

STATE	STRUCTURE	DUTIES	P
New Hampshire	-Regulatory legislation introduced in 1970, 1971 and 1973, none of which approved.		
New Jersey	-Office of Cable TV, Department of Public Utilities	-To regulate the CATV Corporation in the public interest.	
New York	-Commission on Cable Television. -5 members appointed by the Governor. -None hold other public office and no more than 3 from same political party. -Effective 1/1/73	-Develop statewide plan. -Provide standards for municipalities in granting franchises. Prescribe standards for qualifications of applicants. -Prescribe technical standards. -Prescribe standards governing concentration of control. -Provide advice and technical assistance. -Prescribe minimum equipment, service and safety specifications. -Review and act on applications for certificates of compliance. -Represent the interests of the people before the F.C.C. -Encourage cooperative arrangements re educational, instructional and public affairs programming. -Cooperate with municipalities to facilitate multiple systems.	-May issu reso and as r -May comp main such are sary -May der thos in c cont comp -May rece stat poli divi data nece requ

POWERS	FUNDING	GENERAL PROVISIONS
-May promulgate, issue, amend and rescind rules and regulations as necessary. -May require CATV companies to maintain and file such reports as are deemed necessary. -May examine under oath all those involved in ownership or control of CATV companies. -May require and receive from any state agency or political subdivision such data as may be necessary and required.	-Self supporting through assessment of a percentage of gross receipts of CATV companies.	-Requires franchising by municipalities. -Requires a certificate of confirmation to be issued by Commission. -Requires approval by the Commission. for transfer, renewal, or amendment of franchises. -May order the interconnection of cable systems. -Requires each company to provide safe, adequate and reliable service. -May regulate rates. -Requires approval for any abandonment of service. -Prohibited from regulation of program type or content.

STATE	STRUCTURE	DUTIES	POW
New York, Continued		-Encourage the creation of community groups to seek public, non-profit CATV operations. -Maintain liaison with industry to promote rapid development of CATV. -Undertake studies as needed.	
North Carolina	-1973 Statute, effective 2/1/74, allows counties authority to grant franchises for operation of CATV systems.		
North Dakota	-No regulation of CATV. A concurrent resolution directing the Legislative Counsel to study the need for regulating CATV was indefinitely postponed.		
Oregon	-Regulatory legislation introduced in 1973 tabled in Committee.		
Ohio	-No regulation. Possible legislation will be introduced in January, 1974. Regulation of such is up to municipalities.		

POWERS FUNDING GENERAL PROVISIONS

STATE	STRUCTURE	DUTIES
Pennsylvania	-No regulation. Action under way to bring CATV under Public Utilities Commission.	
South Dakota	-Regulated locally- all municipalities have jurisdiction by ordinance to regulate.	
Texas	-Legislature approved Senate Concurrent Resolution petitioning the Congress to inform F.C.C. that it ursurps the rights of Congress in the regulation of CATV (1969).	
Utah	-Public Service Commission attempted to take regulation of CATV under its jurisdiction. Attorney General opinion was favorable. A CATV company appealed actions to Utah Supreme Court. Appeal upheld since court decision. No state jurisdiction over CATV.	
Virginia	-Municipalities and counties given the right to franchise systems. -Efforts to establish state regulation by General Assembly have failed.	

STATE	STRUCTURE	DUTIES	POW
Wisconsin	-Cable TV office in the Public Service Commission.	-Develop and maintain statewide plan for CATV. -Receive information from the cable industry. -Encourage use of cable TV for public service use. -Work cooperatively with F.C.C. & with local franchising authorities. -Represent the state before the F.C.C. -Prescribes rules for procedure and practices which franchises shall follow. -Prescribes rules for construction and operation of CATV. -Prescribes rules for safety and other aspects of CATV. -Review and act upon applications for certification of CATV. -Cooperate with franchise authorities in various fields of studying, adopting the rules of Commission, creating franchise areas. -Finding efficient ways of regulating CATV within the state.	-Adopt necess carry of thi -Requir tems t record other which to the tion o -May ex oath a volved ship o of CAT -Receiv tion f state -May en contra other cies. -May en contra other of sta ment t maximu tion o cation logy. -Exerci powers to car poses chapte

POWERS	FUNDING	GENERAL PROVISIONS
-Adopt rules as necessary to carry out purposes of this law. -Require CATV systems to provide records, files or other material which is necessary to the administration of law. -May examine under oath all those involved in ownership or control of CATV companies. -Receive information from other state agencies. -May enter into contract with other state agencies. -May enter into contract with other divisions of state government to ensure maximum utilization of communications technology. -Exercise other powers necessary to carry out purposes of said chapter.	-Appropriation $50,000 for the fiscal years 1973-74 and 1974-75 plus one percent of a cable operators in-state gross annual operating revenues.	-Facilitate information to interested persons on the use of CATV. -Examine under oath any person who possesses knowledge necessary for proper enforcement of this chapter. -Review criteria under which franchise authorities grant franchises. -Establish classification of CATV and may promulgate separate rules for each classification. -May terminate franchises.

CITY	MINIMUM CHANNELS	BASIC SERVICE	NONBASIC SERVICE	MUNICIPAL
ALBANY -Top 100 market	1	-Franchise shall be used and operated solely for purpose authorized by ordinance of the city - (Albany).		
BAKERSFIELD	12	-Grantee is authorized to operate and relay a TV signal.		-Free service public school fire station recreation c
BERKELEY -Top 100 market	26	-Provide city (1) channel without charge. -Operate and install a CATV. -Distribute color TV as it receives it.		-Provide scho buildings ow trolled by c service.

ANCHISE TERMS FOR SELECT CALIFORNIA CITIES

MUNICIPAL SERVICE	RATES	FRANCHISE TERM	FRANCHISE PAYMENTS
	-Approved by Council. -Cannot be changed without approval of Council.	-No longer than 20 years. -Any franchise granted is renewable. -May be terminated in the event of failure to comply with provisions, provision becomes invalid, or city acquires CATV property. -30 days notice shall be given for termination.	-2% of gross annual receipts. -Payments made annually. -City may inspect records showing gross receipts. -No acceptance of payment shall be construed as a release. -Holding over termination, grantee shall pay not less than 100% of gross profits. -Financial statement at each year showing gross annual receipts.
Free service private and public schools, police, fire stations, city recreation centers	-Reasonable rules adopted by city.	-Term of 50 years. -May be terminated after notice and hearing in the event of: 1. Grantee fails to comply. 2. Any provision became invalid. 3. City purchases property of grantee. -Shall not begin construction until: 1. Acceptance of all terms. 2. Filing of bonds. 3. Contract between Pac. Tel. & Tel. and P.G. & E. 4. Failure to do above within 180 days would result in termination.	-3% Gross receipts-City. -Payable to City Treasurer. -Payments annually. -Each payment shall be accompanied with financial statement.
-Provide schools, churches, buildings owned and controlled by city, free service.	-Customer connections fees: 1. Multiple units--None. -Monthly- residential and commercial- -1st outlet...3.95 per mo. -additional outlet... .75 per mo. -1st 10 units..2.50 per mo. -2nd 10 units..2.00 per mo. -3rd 10 units..1.50 per mo. -Over 30 units..1.00 per mo.	-25 years. -City may terminate after 30 days notice because of failure to comply with provisions or any provision has become invalid or city requires CATV property.	-2% gross annual receipts. Payments made within 30 days after end of calendar year. -City has rights to inspect grantees records. -Any holding after expiration date, grantee shall pay not less than 100% of its gross profits during said period.

CITY	MINIMUM CHANNELS	BASIC SERVICE	NONBASIC SERVICE	MUNICIPAL S
CARMEL-BY-THE-SEA	16	-Operate and install a CATV. -Distribute color TV as it receives it.		
CONCORD -Top 100 market	12	-Operate & install a CATV -Distribute color TV as it receives it.		-Provide schoo services. -City shall ha maintaining, poles, etc., fire alarm.
EUREKA		-Distribute color T.V. which it receives in color. -Operate & install CATV.	-local origination	
FAIRFIELD -Top 100 market	12	-Distribute color T.V. which it receives in color. -Operate and install a CATV		-Free service Center, fire public school administratio 3 connections County buildi wires and app water & sewer plants. -In emergency, upon request make availabl ities to the

MUNICIPAL SERVICE	RATES	FRANCHISE TERM	FRANCHISE PAYMENTS
		-15 years. -Council may terminate if grantee's failed to comply with any provision or any provision has become invalid or the city acquires CATV property. -Franchise may be renewed.	-8% of gross annual receipts as established by Council. -8% payments within 30 days after end of calendar year. -City has right to inspect grantee's records. -Any holding after expiration, grantee shall pay 100% of total gross profits during said period. -Financial statement showing gross annual receipts each year.
rovide schools with free ervices. ity shall have right of aintaining, on grantees oles, etc., a police and ire alarm.		-20 years. -May be terminated if: 1. Grantee has failed to comply with provisions. 2. Any provision has become invalid. 3. City acquires CATV property. -May be renewed.	-Fixed percent of gross annual receipts. -Shall file a financial statement showing gross annual receipts. -City has right to inspect records showing gross annual receipts. -Any holding after termination, grantee shall pay city not less than 100% total gross profits during said period. -City shall have the right to inspect licensee records of gross receipts.
		-20 years. -May be terminated if: 1. Grantee has failed to comply with provisions. 2. Provisions become invalid.	-2% gross annual receipts. -Paid annually. -Financial statement showing gross annual receipts.
ree service to Civic enter, fire stations, ublic schools, school dministration building, connections to Solano ounty buildings, and ires and appurtenances to ater & sewer treatment lants. n emergency, grantee shall pon request of Mayor, ake available its facilties to the city.		-20 years. -May be terminated if: 1. Failure to comply with any provisions. 2. Any provision has become invalid. 3. City acquires CATV property. -May be renewable.	-5% gross annual receipts. -Made annually to Director of Finance. -Financial statement. -Any holding over termination, grantee shall pay 100% total gross profits of said period. -All accounts, books, etc., shall be open for inspection. -Any holding after expiration, etc., grantee shall pay 100% of its total gross receipts during said period.

CITY	MINIMUM CHANNELS	BASIC SERVICE	NONBASIC SERVICE	MUNICIP
OAKLAND -Top 100 market	12	-Operate and install CATV.		-In emergenc upon Mayor' available i to the city
PETALUMA -Top 100 market	12	-Operate and install CATV.		
REDDING	7	-Provide one channel for an educational station. -Operate and install CATV. -Distribute color TV which it receives in color.	-CATV may provide: 1. Music 2. Motion pictures. 3. Weather. 4. Special and Community events. 5. Sports.	-Free charge long as ins is recovere
SAN DIEGO -Top 100 market	20	-Distribute color TV which it receives in color. -Deliver all cablecast signals which are received by the F.C.C. -Distribute in color those telecast signals which it receives in color. -Provide local government an access channel. -Delivery of signals to TV receivers of subscribers. -Educational access channel. -Lease channels -Maintain continuous service to subscribers. -Provide one channel for County. -Capable of CATV service to subscribers of city. -Operate and install CATV. -Provide one channel to city without charge.	-Any communications service other than basic service, such as: 1. Pay TV. 2. Burglar alarm 3. Intelligence transmission. 4. Facsimile reproduction. 5. Meter reading. 6. Home shopping. 7. Public service. 8. Etc.	-At own expe nections to unit, also, lic school, university -Provide con basic servi transmitted -Special ser provided at county or s -Provide fre vate nonpro and shall n county or n -If nonprofi sire additi licensee sh charging th actual pric

MUNICIPAL SERVICE	RATES	FRANCHISE TERM	FRANCHISE PAYMENTS
-In emergency grantee shall, upon Mayor's request, make available it's facilities to the city.		-20 years. -May be terminated if: 1. Grantee has failed to comply with provisions. 2. Any provision has become invalid.	-Provided in Franchise. -Financial statement. -City may inspect grantees records. -No acceptance of payment may be construed as a release of any claim the city still may have. -Any holding after termination, grantee shall pay 100% total gross profits during said period.
		-20 years. -May be terminated if: 1.Grantee has failed to comply with provisions. 2.Any provision has become invalid.	-2% gross monthly receipts. -Paid annually. -Financial statement. -City has right to inspect grantees records.
-Free charges to schools as long as installation cost is recovered.			-3.5% monthly total gross receipts until 6/30/75. 2% monthly total gross receipts after 6/30/75. -File a financial statement annually. -City may inspect records of franchise holders gross receipts.
-At own expense, make connections to each County unit, also, to each public school, college & university site. -Provide connections to all basic service signals transmitted by CATV. -Special services shall be provided at expense of county or school. -Provide free CATV to private nonprofit schools and shall not charge county or nonprofit schools. -If nonprofit schools desire additional service, licensee shall provide it, charging the school for actual prices.	-Reasonable rules and regulations.	-15 years. -County may terminate if: 1.Licensee fails to comply with provisions, conditions, obligations, etc. -During 8th year, licensee may make application for new license. -County, upon termination, may purchase all or part of said property at a fair value. -In case of licensee's default, all or any of licensee's property underground shall become property of County.	-3% gross annual basic subscriber receipts. -3% gross nonbasic service receipts. -3% annual advertising receipts. -3% gross annual lease receipts. -Payable 3 months after each fiscal year along with financial statements. -If licensee fails to pay: 1. Must pay 10% of amount due. 2. Must pay 1% per month of amount due.

CITY	MINIMUM CHANNELS	BASIC SERVICE	NONBASIC SERVICE	MUNICIP
SANTA CRUZ -Top 100 market	12	-Install and operate CATV. -Distribute color TV signal which it receives in color.		
YREKA		-Install and operate CATV.	-Provide piped music. -Motion pictures -Transmitting original cablecast programming originating with the licensee. -Weather. -Community events and special events. -Sports. -No extra charge for above.	

MUNICIPAL SERVICE	RATES	FRANCHISE TERM	FRANCHISE PAYMENTS
		-20 years. -May be terminated if: 1. Grantee fails to comply with any provisions. 2. Any provision has become invalid. 3. City acquires CATV - Is renewable.	-4% gross annual receipts. -Paid annually. -Financial statement. -City may inspect grantees records of gross receipts. -No acceptance of any payment shall be construed as a release the city may use for further payment by grantee.
		-10 years. -May be terminated if: 1. Licensee fails to comply with provisions of chapter. 2. Provisions become invalid.	-2% monthly gross receipts -Financial statement showing total annual gross receipts. -City has right to inspect all licensee's records showing gross receipts.

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CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RESE
ALBANY	-Name and address of applicant. a. Partnership-each applicant. b. Corporation-Directors, main offices, major stockholders, parent and subsidiary companies. -Statement and description of CATV proposed construction, maintenance, operation, location, installation and the extent of poles and public utilities that will be used. -Description of public streets, places and proposed areas which applicant seeks. -Map showing proposed area for CATV services. -Schedule of proposed rates to subscribers and proposed service agreement. -Copy of contract between applicant and public utility. -Statements of all agreements between applicant and any person or corporation. -Financial statement. -Provide other information as council deems necessary. -Grantee shall reimburse all publication expenses incurred by the granting of franchise.	-Surety bond required ($15,000) renewable annually. -No bond shall be construed to excuse faithful performance. -Liability insurance ($100.000). -General comprehensive liability insurance: 1. $100,000 - personal injury or death to one person. 2. $300,000 - personal injury or death to 2 or more persons in any one occurence. -Policies shall name city, officers, boards, etc. -$50,000 damage to property.	-Nonexclusive -No privilege or exemption. -Any privilege claimed shall be subordinate to any lawful occupancy of streets or public property. -Cannot be sold, leased, transferred disposed of, etc., without consent of Council. -Grantee not to be relieved of obligation to comply with provisions of chapter. -Shall be subject to transfer by city, to any other -No recourse against city for loss, cost, expense, or damage arising from requirement of chapter. -Concerning pole space; granted franchise shall not relieve grantee of any obligation. -Shall be in lieu of all other rights. -Subject to all requirements of city ordinances, rules, etc. -No pay TV.	-Acquire pro grantee at value. -Power to g similar fr other perso tions. -Power to a of chapter -No franchi a waiver t or power o -Council ma sary thing cise of its -Inspection and record
BAKERSFIELD		-$5,000 surety bond. -Liability insurance 1. $100,000 - personal injury. 2. $300,000 - personal injury or death of two or more in one occurrence. 3. $50,000 damage to property. -$100,000 performance bond. -No bond shall be construed to excuse faithful performance.	-No privilege or exemption. -Any privilege claimed shall be subordinate to any lawful occupancy of streets or public property. -Can't be sold, leased, transferred, disposed of, etc., without consent of city. -Non exclusive. -Grantee shall not be relieved of obligations to obtain poles. -No recourse against city. -No pay TV.	-Usual right served to -No franchi a waiver t or power o -Power to g franchises identical.

RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
-Acquire property from grantee at reasonable value. -Power to grant other(s) similar franchises to other persons or corporations. -Power to amend any part of chapter. -No franchise constitutes a waiver to the exercise or power of city. -Council may do all necessary things in the exercise of its jurisdiction. -Inspection of property and records.	-Maintain an office in the city with telephone listing.	-Any poles, cable lines, etc., to be constructed shall be approved by Director of Public Works. -Must obtain approval from Director of Public Works to install or erect facilities. -In areas of city where transmission of facilities are underground, grantee sh ll likewise construct. -Grantee shall remove, protect, support, etc., any property of grantee by reason of traffic conditions, public safety, etc. -Upon failure to perform street work, the Director of Public Works may cause it to be done, and grantee shall pay. -If grantee operates thru telephone facilities, he may not make use of street facilities. -Any part of full removal or discontinuance for 12 months, or system has been terminated, grantee shall remove all necessary facilities. -Maintain office in city. -45 days after acceptance grantee shall obtain all permits. -90 days after obtaining permits, grantee shall start construction. -90 days after construction grantee shall render services to subscribers. -Failure to commence (last 3) and complete, shall be grounds for termination.	-No person, corporation, etc., in service area shall be refused service. -All matters to be filed with city clerk.
-Usual rights & powers reserved to city. -No franchise constitutes a waiver to the exercise or power of city. -Power to grant other franchises similar or identical.	-Maintain an office in the city with telephone listing.	-City manager may cause work to be done, as stated in franchise, and grantee shall repay city. -Grantee shall, at own expense, make any changes in public places required by city. -If franchise property is discontinued for any reason for 12 months, grantee shall remove such property.	-Grantee shall not sell, lease, or rent TV receivers or repair such receivers. -Grantee prohibited from selling time for advertising. -Grantee shall deliver all local stations.

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RES
BAKERSFIELD continued				
BERKELEY	-The following in writing and filed with City Clerk: 1. Name and address. 2. Statement of proposed CATV. 3. Description of public places which grantee seeks. 4. Map showing proposed area. 5. Amounts or % grantee will pay city. 6. Length of term. 7. Schedule of charges to subscribers. 8. Copy of contract(s) between grantee and public utility. 9. Copy of contract(s) between grantee and any other person or corporation in reference to franchise. 10. Financial statement. 11. Application fee - not less than $500. 12. Grantee shall provide any other information at any time.	-Performance bond - $15,000 renewable annually. -Hold harmless the city. -Liability insurance: 1. $300,000 personal injury. 2. $500,000 personal injury or death, two or more. 3. $50,000 property damage. -All policies shall name city, officers, etc., and all additionally insured. -No bonds shall be construed to excuse faithful performance.	-Nonexclusive. -No privilege or exemption. -Cannot be sold, transferred, leased, disposed of, etc., without consent Council. -Not be relieved of requirements. -Subject to transfer by city. -No recourse against city. -Subject to all requirements of city. -Not relieved in obtaining pole space. -Shall be construed under said franchise and no other.	-Right of ci property of fair value. -All laws an vided by ch -Grantee agr with all re -May grant o for CATV. -Power to an of ordinanc -Franchise s stitute a v or power of -Council may which are n this ordina

E	RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
			-180 days to commence construction. -Director of Public Works shall approve installation. -City Manager shall prescribe how abandonment shall take place.	
on. d nt y. ng r	-Right of city to acquire property of grantee at a fair value. -All laws and rights provided by charter. -Grantee agrees to comply with all requirements. -May grant other franchises for CATV. -Power to amend any section of ordinance. -Franchise shall not constitute a waiver of right or power of the city. -Council may do all things which are necessary under this ordinance.	-Maintain office in city.	-45 days after acceptance-obtain permits. -90 days after issuance of permit - begin construction. -90 days after construction - render service. -Failure of above results in termination. -Poles, wires, etc., shall be approved by Director. -Shall not erect upon public place, (unless now existing) without approval of Director of Public Works. -If discontinued (12 months) must remove all property other than stipulated by Director of Public Works. -Property remaining in place (30 days) after termination shall be permanently abandoned. -Must abandon what Director of Public Works prescribes. -At grantees expense, protect, support, relocate, etc., any property required by Director of Public Works. -Director of Public Works may cause work to be done which has been prescribed by provisions. -Grantee shall not construct facilities on public or private places which are designated, but haven't become, a public street. -In areas where underground facilities exist, grantee shall likewise construct. -Copies of installation on public utilities shall be filed with city clerk.	-No person, corporation, etc., in service area shall be refused service. -Used only for CATV purposes.

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CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS
CARMEL-BY-THE-SEA	-The following in writing and filed with City Clerk: 1. Name and address. 2. Statement of proposed CATV. 3. Description of public places which grantee seeks. 4. Map showing proposed area. 5. Schedule of rates to subscriber. 6. Copy of contract between grantee and any public utility. 7. Statement of contracts between grantee and any person with respect to CATV. 8. Financial statement. 9. Grantee shall provide any other information at any time. -Council may grant franchise to best qualified. -Franchise may be renewed. -Shall reimburse city for publication expenses.	-Performance Bond - $15,000 renewable annually. -Liability Insurance 1. $500,000 personal injury or death of 1 person. 2. $1,000,000 personal injury or death of two persons. 3. $100,000 damage to property. -All policies shall name city, officers, etc., as additionally insured. -No bonds shall be construed to excuse faithful performance.	-Nonexclusive. -No privilege or exemption. -Any privilege claimed, shall be subordinate to any prior lawful occupancy. -Franchise cannot be sold, leased, transferred, disposed of, etc., without consent of Council. -Not relieved of obligation to comply with provisions. -Transferable to any other officer or department. -No recourse against city. -Subject to all requirements of city codes. -No pay TV.	-Right to property -Granting other pe -Power to -Granting does not waiver o governme -Council necessar
CONCORD	-Filed with City Clerk in writing: 1. Name and address. 2. Description of proposed CATV. 3. Description of proposed public places and equipment to be used. 4. Schedule of rates. 5. Copy of contract between applicant and any public utility. 6. Statement of any contract between applicant and any person or corporation relating to CATV. 7. Financial statement. 8. List where applicant operates other CATV. 9. Council may demand that applicant provide any information needed. -CATV permit must be used exclusively as authorized.	-Performance Bond -$20,000 renewable annually. -No bonds shall be construed to excuse faithful performance. -Liability insurance - $500,000. -General liability insurance - $300,000 personal injury or death of any one person. -$500,000 personal injury or death of two or more. persons in any one occurence. -$50,000 property damage. -All policies must name city, officers, board, etc., as additionally insured.	-Nonexclusive. -No privilege or exemption. -Any privilege claimed, shall be subordinate to any prior lawful occupancy. -Franchise cannot be sold, leased, transferred, disposed of, etc., without consent of Council. -Not relieved of obligation to comply with provisions. -Transferable to any other officer or department. -No recourse against city. -Subject to all requirements of city codes. -No pay TV.	-Right to property -Granting other pe -Granting does not from exe -Council necessar -All righ served a to compl quiremen -May amen

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E	RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
ion. o ld, is- t - o- her ty. -	-Right to acquire grantees property at fair price. -Granting franchises to other persons is legal. -Power to amend provisions. -Granting of franchise does not constitute a waiver or bar to exercise government right. -Council may do all things necessary.	-Maintain office in city.	-Construction of poles, wires, cables, etc., to be approved by Superintendent of Public Works. -Grantee shall not install anything on public places without approval of Superintendent of Public Works. -Discontinued use of CATV (12 months), grantee shall remove all said property. -Grantee's property remaining in place (30 days) shall be considered permanently abandoned. -Abandonment shall be prescribed by Superintendent of Public Works. -30 days after acceptance of franchise all permits must be acquired. -Grantee shall make necessary changes by public request at his own expense. -Superintendent of Public Works may cause prescribed work to be done, at grantee's expense, if not completed by grantee. -If any public utility is underground, the grantee shall likewise construct. -Copies of installation on public utility poles.	-All matters to be filed with City Clerk. -No person shall be refused service.
ion. o ld, h- . - o- her ty. -	-Right to acquire grantee's property at fair price. -Granting franchises to other persons is legal. -Granting of franchise does not bar government from exercising rights. -Council may do all things necessary. -All rights and powers reserved and grantee agrees to comply with any requirements of city. -May amend provisions.	-Maintain office in city.	-60 days after acceptance, grantee must obtain all permits required. -90 days after issuance of permit, begin construction. -Failure to do above results in termination of CATV. -Any pole, cables, etc., to be constructed shall be approved by the Superintendent of Public Works. -Grantee shall not install facilities on public property, places, or private property, designated to become a public street. -In areas of said undergrounding facilities, grantee shall likewise construct. -Discontinued use (6 mo.) grantee shall remove all said property and apparatus.	

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISES	RIGHTS RESE
CONCORD, continued				
EUREKA	-Filed with City Clerk in writing. 1. Name and address. 2. Description of proposed CATV. 3. Schedule of proposed rates and charges. 4. Statement of corporation officers, directors and associates. 5. Listing of other areas served by CATV. 6. Statement of all contracts between grantee's and other persons, corporations, etc., pertaining to CATV. 7. Financial statement. -Grantee shall reimburse city for publication expenses. -Shall be used solely for CATV purposes.	-Performance bond - $50,000 renewable annually. -No bonds shall be construed to excuse faithful performance. -Liability insurance: 1. $300,000 personal injury or death to one person. 2. $500,000 personal injury or death to two or more in one occurrence. 3. $50,000 damage to property. -All bonds shall name city officers, boards etc., as additionally insured. -No license shall become effective until insurance policies have been delivered.	-Nonexclusive -No privilege or exception. -Any privilege claimed, shall be subordinate to any prior law. -Cannot be sold, leased, transferred, disposed of, etc., without consent of Council. -No recourse against city. -Subject to all requirements of city ordinances. -Shall not be relieved of obligations of provisions. -Submit to Council, schedule of rates and charges. -No permission to enter private property without consent. -No pay TV.	-All rights -Granting o franchises -Acquire CA fair value

RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
		-Grantee's property remaining in place (30 days) after termination, shall be permanently abandoned. -Property of grantee, to be abandoned, must be prescribed by Director of Public Works. -At grantee's expense, Director of Public Works may require changes by public improvements. -Failure of grantee to commence changes, Director of Public Works may cause such work to be done, at grantee's expense.	
-All rights and powers. -Granting other CATV franchises. -Acquire CATV property at fair value.	-Maintain office in city.	-30 days after granting, obtain all necessary permits. -90 days after permits, commence installation. -60 days after installation begin rendering service. -Failure to do above is grounds for termination. -Poles, cables, etc., shall be constructed only after approval of Director of Public Works. -May not erect facilities without approval of Director of Public Works. -When any utility providing services are underground, grantee shall likewise construct. -If discontinued, terminated, etc., grantee shall remove said properties. -At grantee's expense, Director of Public Works may require changes by public improvements. -Failure of grantee to perform work, Director of Public Works may cause work to be done at grantee's expense. -Must install proper shielding.	-All matters to be filed with City Clerk. -Increase of rate schedul must be approved by Council. -If F.C.C. or P.U.C. takes jurisdiction, authority of city to approve rates shall cease. -Grantee prohibited from engaging in the business of selling, repairing, etc., T.V. or receivers which make use of its system. -Local stations shall be transmitted on same channel.

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RES
FAIRFIELD	-The following shall be filed with the city manager. 1. Name and address. 2. Description of proposed CATV. 3. Description of proposed public places to be used. 4. Map showing CATV service area. 5. Schedule of rates to customers. 6. Copy of contract between applicant and any utility. 7. Statement of all agreements between applicant and any person, corporation, etc., pertaining to CATV operation. 8. Financial statement. 9. Shall provide Council with any necessary information. -Council may refuse franchise. -Shall be used only to operate a CATV system. -An application fee of $100.00 shall be paid. -CATV shall be used only as authorized. -May be renewed.	-Performance bond - $100,000 renewable annually. -No type of bonds shall be construed to excuse faithful service. -File all bonds with Director of Finance. -Liability insurance: 1. $300,000 bodily injury or death to one person. 2. $500,000 bodily injury or death to two or more persons in any one occurrence. 3. Policy must mention city, its officers, etc., any additional insured.	-Nonexclusive -No privilege or exemption. -Any privilege claimed shall be subordinate to prior law. -Cannot be sold, leased, transferred, disposed of, etc., without consent of Council. -Not relieved of obligations to comply with provisions. -Transferrable by city to any other officer, department, etc., of city. -No recourse against city. -Subject to all laws. -Shall not relieve grantee of any obligation relating to pole space. -Franchise shall be in lieu of all other rights, powers, etc. -No pay TV.	-Acquire C a fair va -All right quired an comply wi -May grant franchise -Power to -Granting tute a wa exercise right or city. -Council m necessary jurisdict
OAKLAND -Top 100 market	-Council may prescribe procedures for submission of applications. -Council may require additional information, and may include additonal conditions, as it may deem advisable. -Grantee shall reimburse city for publication expenses.	-Performance bond - $100,00 renewable annually. -No bonds shall be construed to excuse faithful performance. -Liability insurance. -General comprehensive liability insurance policy. 1. $300,000 personal injury or death of one person. 2. $500,000 personal injury or death of 2 or more persons in one occurrence. 3. $100,000 damage to property.	-Nonexclusive -No privilege or exemption. -Any privilege claimed shall be subordinate to prior law. -Cannot be sold, transferred, leased, disposed of, etc., without consent of Council. -Not be relieved of obligations to comply with provisions. -Transferable by city to any other officer, department, etc., of city.	-May grant or identi -Amend any ordinance -Granting tute a wa ercise of right or -Council ma necessary jurisdicti -To acquire reproducti franchises -Eminent do

RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
-Acquire CATV property at a fair value. -All rights which are required and grantee must comply with them. -May grant other CATV franchises. -Power to amend provisions. -Granting may not constitute a waiver to the exercise of government right or power of the city. -Council may do all things necessary to exercise its jurisdiction.	-Maintain office in city. -May interrupt service only for a good cause and for the shortest time possible.	-60 days after acceptance, obtain necessary permits. -90 days after permits, begin construction. -120 days after construction begin rendering services. -Failure of above are grounds for termination. -Poles, cables, etc., to be constructed shall be approved first by Director of Public Works. -Shall not install facilities on places designated to become public streets, but have not yet. -At grantees expense, shall install underground facilities. -Discontinuance of system (12 mo.), terminated, etc, grantee shall remove all said facilities. -Property remaining in place (30 days) after termination, shall be permanently abandoned. -City Engineer shall prescribe how property shall be abandoned. -At grantee's expense, make required changes by public improvements; as stated by the Director of Public Works. -Director of Public Works may after failure to perform street work - cause work to be done, at grantee's expense. -Copies of agreement between utility poles and grantee shall be sent to Director of Public Works.	-Council may grant application to best qualified. -All matters to be filed with City Clerk. -No person or corporation shall be refused service. -Copies of all petitions, etc., submitted to any state or federal agency, shall also be submitted to City Council. -Neither grantee nor licensee shall: 1. sell or lease TV or receivers of such. 2. Engage in the repair of such sales or repairs.
-May grant other similar or identical franchises. -Amend any section of the ordinance. -Granting may not constitute a waiver to the exercise of government right or power of the city. -Council may do all things necessary to exercise its jurisdiction. -To acquire, at a cost of reproduction, CATV and franchises. -Eminent domain.	-Maintain office in city. -May interrupt service for a good cause, and for the shortest time possible.	-Grantee shall obtain necessary permits, begin construction, and start rendering service, all within such times as stated in franchise. -Failure to do above, will be grounds for termination -Grantee agrees if not complete within time period, he will pay to the city not less than $750 a day until finished.	-Copies of all petitions, etc., submitted to any state or federal agency, shall also be submitted to City Manager. -No person or corporation shall be refused. -Grantee nor employees shall engage in business of providing any device of CATV. -Franchise shall be used only to distribute CATV.

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RES
OAKLAND, continued			-No recourse against city. -Subject to all state and federal laws. -Not relieved of any obligation involved in obtaining pole space. -Shall be in lieu of all other rights, powers, etc.	-All rights provided and grante ply with the city rights.
PETALUMA -Top 100 market	-Following shall be filed with City Clerk in an approved form: 1. Name and address. 2. Description of proposed CATV. 3. Map of area to be served. 4. Schedule of rates to customers. 5. Statement of corporate organization of applicant. 6. Statement of all agreements between applicant and person, corporations, etc., pertaining to franchise and CATV.	-Surety Bond - $5,000 renewable annually. -No bonds shall be construed to excuse faithful service. -General Comprehensive Liability insurance: 1. $300,000 personal injury or death of one person. 2. $500,000 personal injury or death of two or more persons in one occurrence. 3. $50,000 damage to property. -Policies shall name all additional insured. -No franchise shall be effective until all policies are filed with the city.	-Nonexclusive -No privileges or exemptions. -Any privilege claimed, shall be subordinate to any prior law. -Cannot be sold, transferred, leased, disposed of, etc., without consent of city. -No recourse against city. -Subject to all requirements of city ordinance rules, powers, etc.	-All rights vided by and grante comply wi of the ci these rig -To acquire CATV thro chase or

E	RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
y. d i- in- tc.	-All rights and powers provided by any ordinance, and grantee agrees to comply with all actions of the city to exercise these rights.		-When construction on public utility poles is to be used copies of agreement must be filed with City Manager. -Approval of City Manager to install poles, cables, etc., is required. -Shall not install facilities on public or private places which has not yet become a public street, but is designated to. -Any city owned facilities, which must be relocated removed for CATV, must reimburse city. -In city, where designated underground districts, CATV shall do likewise. -Discontinue (12 mo.), terminated, etc., grantee shall remove all said property. -Any grantee's property remaining in place (30 days) after termination, shall be considered permanently abandoned. -City Manager shall prescribe how property shall be abandoned. -Grantee shall make, at own expense, required changes of public improvements. -At grantee's expense, City Manager may cause work to be done, upon failure of grantee to commence work required by law.	-Franchise shall be used only to distribute CATV.
o ed y. e	-All rights and power provided by any ordinances and grantee agrees to comply with requirements of the city in exercising these rights. -To acquire property of CATV through fair purchase or condemnation.		-30 days after granting, obtain necessary permits. -90 days after permits, commence installation. -90 days after installation begin rendering services. -Failure to do above are grounds for termination. -Poles, cables, etc., to be installed in streets, shall be approved by Superintendent of Streets. -Approval of Director of Public Works to install facilities on public property (except those already existing).	-All matters to be filed with City Clerk. -Rate schedule must have city approval. -If P U.C or F.C.C. takes jurisdiction over operations and rates, then city to approve rates. -May examine all records kept by franchise holder.

CITY	APPLICATION REQUIREMENTS	PERFOPMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RES
PETALUMA, Continued				
REDDING	-Following shall be filed with City Clerk in approved form: 1. Name and address. 2. Description of proposed CATV. 3. Statement of proposed rates to customers. 4. Copy of contract(s) between any utility and applicant. 5. Statement of the corporate organization of applicant. 6. Financial statement. -Council may grant franchise to best qualified. -Used and operated only for CATV. -Statement setting forth all agreements between applicant and any person, corporation, etc., pertaining to CATV.	-Surety Bond - $50,000 renewable annually for first two years. -No bonds shall be construed to excuse faithful service. -General Comprehensive Liability insurance: 1. $100,000 personal injury or death of one person 2. $300,000 personal injury or death of two or more persons in one occurrence. -Policies shall name all additionally insured. -All policies must be delivered to city before they become effective.	-No privilege or exemption. -Any privilege shall be subordinate to prior laws. -Cannot be sold, transferred, leased, disposed of, etc., without consent of city. -Grantee must comply with obligations of provisions. -Transferrable by city to any other officer, department, etc., of city. -No recourse aginst city. -Subject to all requirements of city laws, rules, etc. -Shall not relieve franchise holder of obligations in obtaining pole space.	-All rights which are franchise to comply of city in of such ri -May impose

RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
		-Where underground service of any utility is in force, grantee agrees to do likewise. -Discontinuance (12 mos.), termination, etc., grantee shall remove all said property. -Grantee shall, at his expense, make all required changes by public improvements. -Upon failure of grantee to do required work, the Director of Public Works may cause the work to be done, at grantee's expense. -Grantee shall, at its expense, maintain adequate shielding, filtering and grounding of CATV.	
-All rights and powers which are required and franchise holder agrees to comply with any action of city in its exercise of such rights and powers. -May impose restrictions.	-Must maintain a local office.	-120 days after granting, CATV shall be commenced. -Service pursued with due diligence after above. -Failure to do above are grounds for termination. -Poles, cables, etc., shall be approved by Director of Public Works before installation. -Approval of Director of Public Works before installing facilities on public property. -In those areas where underground facilities exist, CATV must do likewise. -Construction of cable shall be approved by council. -Discontinuance (12 mo.), terminating, etc., grantee shall remove all said property. -Director of Public Works shall prescribe means of abandoning CATV property.	-All matters to be filed with City Clerk. -Franchise holder shall reimburse city for expenses incurred by granting of franchise. -Franchise holder shall not: 1. Sell TV or receivers. 2. Engage in the repair or sale of parts for the same. -No pay TV. -Must provide all local TV stations on CATV. -If PUC or FCC takes jurisdiction, then authority of city ceases. -Rates must have approval of Council. -Franchise holder shall not interrupt any part of any program. -Copies of agreements between public utilities and grantee shall be filed with city.

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CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS RE
SAN DIEGO -Top 100 market	-If licensee is corporation approval of Board of Supervisors shall be required. -Names and address of other business entities. -Shall notify County of any closure or sale of any part of property. -Carry local stations. -Maps of service areas.	-Surety Bond, $5,000 for entire term of licensee. -No bonds shall be construed to excuse faithful service. -Hold County harmless from any liability. -Liability insurance: 1. $250,00 personal injury or death of one person. 2. $500,000 personal injury or death of two or more persons in one occurrence.	-Cannot be sold, leased, transferred, disposed of etc. -Nonexclusive. -No privileges or exemptions. -Subordinate to any prior use of lawful occupancy. -Not relieved of obligations to comply with provisions. -Subject to change by city or any other officer, department, etc., of city. -No recourse against city. -Does not relieve franchise holder of any requirements of city. -Furnish county with progress reports and maps of areas being served and potentially to be served.	-All right quired by city and to comply tion of c exercise -Granting stitute a to the ex governmen power of -May grant -All right any provi see agree any actio such righ -Any charg licensee -Inspect f records. -Waive any is in the or provis hardship subscribe -To constr etc., any alley, et -To waive provision lic inter

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RIGHTS RESERVED TO CITY

-All rights which are required by provisions of city and grantee agrees to comply with any action of city in its exercise of such powers.
-Granting shall not constitute a waiver or bar to the exercise of any government right or power of city.
-May grant other franchises
-All rights and powers by any provision, and licensee agrees to comply with any action in exercising such rights and powers.
-Any charges arising from licensee under license.
-Inspect facilities and records.
-Waive any provision if it is in the public interest or provision will impose hardship to licensee or subscribers.
-To construct, reconstruct, etc., any highway, street, alley, etc.
-To waive any rights of provisions if in the public interest.

SUBSCRIBER COMPLAINTS

-Limits system failures to limited time (2 hrs.)
-Maintain office in county
-Upon complaint, make demonstration to county that signal meets requirements.
-Licensee shall maintain written record of all complaints.

PERMITS AND CONSTRUCTION

-180 days after acceptance installation shall commence.
-Service pursued with due diligence.
-Failure to do above (180 days) possible termination.
-No abandonment shall be granted after service begins unless authorized by Council.
-Shall be underground unless otherwise specified.
-Construction must be approved by City Engineer.
-30 days after acceptance, obtain permits.
-90 days after permits, commence construction.
-5 years after operation, provide basic service to every residence.
-Licensee shall utilize existing facilities whenever possible and not any new facilities.
-In areas where underground facilities lie, the licensee shall do likewise.
-Licensee shall provide dual cable capability throughout the underground system.
-With respect to location or relocation, licensee shall comply with Board of Supervisors or County Engineer.
-Performance of work on or in public shall be in compliance with the San Diego Code and in conformity with approved plans by the County Engineer.
-Any cable laid, shall be placed so not to interfere with public places.
-In preparing cable, licensee shall leave all said areas as in good condition prior to work.
-Any damage by licensee shall be repaired within 10 days.
-Discontinuance, termination, etc. At licensee's expense remove all said property.
-Abandoned property shall be prescribed by County Engineer.
-Grantee shall, at its own expense, make required changes by City Engineer constituting public improvements.

MISCELLANEOUS

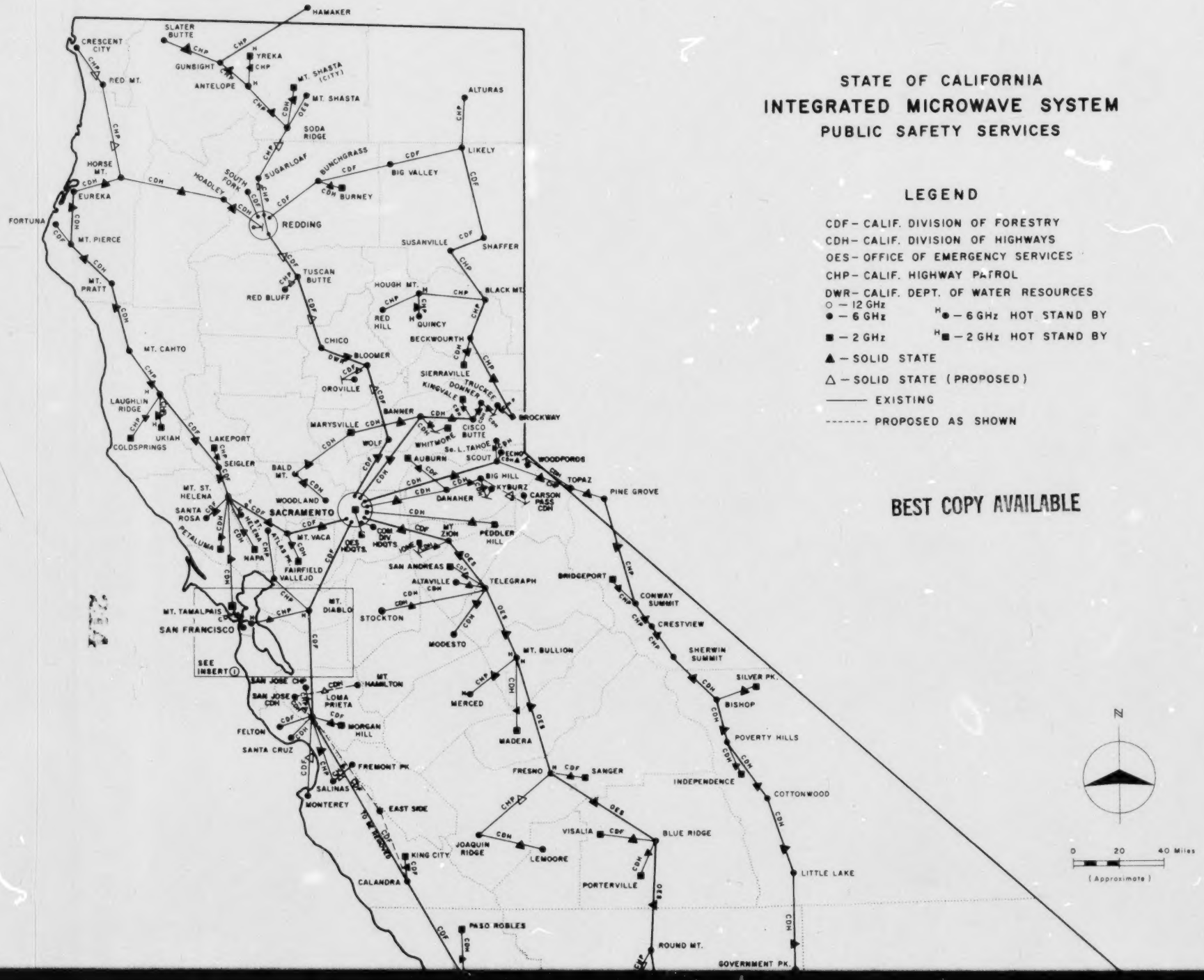
-If PUC or FCC or federal or state agency shall exercise jurisdiction, the jurisdiction of county shall cease.
-No person, corporation, etc shall be refused service.
-No right (licensee) to sell, lease, repair, etc., receiving sets.
-No fees or charges to repair subscriber owned receiving devices.
-County shall have right to inspect all records.

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISE	RIGHTS
SAN DIEGO, Continued				
SANTA CRUZ Top 100 market	-Following in writing, and filed with City Clerk. 1. Name and address (also partner, corporation, etc.) 2. Statement of proposed CATV construction, location, and components. 3. Description of public places which applicant proposes to utilize. 4. Map showing proposed area. 5. Schedule of rates to subscribers. 6. Copy of contract between applicant and any public utility. 7. Statement setting forth agreements between applicant and any person, firm, corporation, etc., relating to CATV. 8. Financial statement. 9. Provide additional information. -Grantee shall reimburse city for publication expense. -Council may grant franchise to best qualified. -CATV is to be used only for the purposes authorized.	-Surety Bond, $10,000 renewable annually. -No bonds shall be construed to excuse faithful performance. -General comprehensive liability insurance. 1. $100,000 personal injury. 2. $300,000 personal injury or death of two or more persons in one occurrence. -Policies shall name additional insured.	-Nonexclusive. -No privilege or exemption -Any privilege claimed shall be subordinate to any prior law. -Can't be sold, transferred, leased, disposed of, etc., without consent of Council. -Shall not be relieved of obligations to comply with provisions. -Transferable by city to any other officer, department, etc. of the city. -No recourse against city. -Subject to all laws, powers, etc. -Shall not relieve grantee of any obligation involved in obtaining pole space. -Shall be in lieu of any and all rights, privileges and etc. -No pay TV.	-Acquire tee at -Every r this or agrees action exercis -Grant o chises. -Amend s chapter -Grant s a waive ercise right o city. -Council sary th cise of

SE	RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
			-Failure of grantee to commence work, the City Engineer may cause the work to be done at grantee's expense. -Installation shall be properly grounded. -Protective shielding.	
ion o r- of, of of o ty. y eges	-Acquire property of grantee at fair value. -Every right and power of this ordinance and grantee agrees to comply with any action of city in its exercise of such power. -Grant other CATV franchises. -Amend section or parts of chapter. -Grant shall not constitute a waiver or bar to exercise any government right or power of the city. -Council may do all necessary things in the exercise of its jurisdiction.	-Maintain office in city.	-60 days after acceptance, obtain permits. -90 days after permits, begin installation and construction. -30 days after construction start to render service. -1 year from start, service to all areas designated on map in the application shall be provided. -Failure to do above are grounds for termination. -Poles, cables, etc., to be installed must be approved by Director of Public Works. -Grantee shall not install facilities on public or private areas which are designated, but have not yet become, public streets or places. -Discontinuance (12 mo.) termination, etc., grantee shall remove said poles and property. -Property remaining after (60 days) shall be considered permanently abandoned. -Director of Public Works shall prescribe abandonment procedures. -The grantee, at its own expense, shall make changes of public improvements. -Upon failure of grantee to complete work, Director of Public Works may cause such work to be done, at grantee's expense. -Installation on any public utilities, certified copies of such agreements shall be filed with City Clerk, if required by him.	-All matters to be filed with City Clerk. -No person, corporation, etc., shall be refused service.

CITY	APPLICATION REQUIREMENTS	PERFORMANCE BONDS	LIMITATIONS OF FRANCHISES	RIGHTS RE
YREKA	-Following shall be filed with City Clerk: 1. Name and address. 2. Description of proposed CATV. 3. Statement of proposed rates and charges to subscribers. 4. Copy of contract(s) between applicant and any public utility. 5. Statement of the corporation organization (names, addresses, etc.) and subsidiary companies with listings being served CATV. 6. Financial statement. 7. Statement of proposed licensee fee payment to city. -Licensee shall use system only for CATV. -City may include any other reasonable condition(s). -Statement setting forth all agreements between applicant and any person, corporation, etc., pertaining to CATV. -No permit will become effective until all requirements are met. -Map of poles, structures, etc., on any public place, shall be approved by City Manager.	-Surety Bond, $10,000 for first two years, $5,000 for remainder of term. -No bonds shall be construed to excuse faithful performance. -General Comprehensive Liability insurance: 1. $100,000, personal injury or death to one person. 2. $300,000 personal injury or death of two or more persons in one occurrence. 3. $50,000 - damage to property. 4. Policies shall mention city insured, along with all others. 5. Franchise shall not be granted unless policies have been delivered to city.	-Any privilege claimed shall be subordinate to prior law. -Cannot be sold, leased, transferred, etc., without consent of city. -Must comply with all of the provisions. -No recourse against city. -Subject to all requirements of city rules, laws, ordinances, etc.	-All rights quired by licensee i ply with a city in ex rights, po -May impose strictions limitation the area(s -May grant -May extend formance o done. -Review ter sions of l impose rea strictions to area(s) -Purchase C value.

S	RIGHTS RESERVED TO CITY	SUBSCRIBER COMPLAINTS	PERMITS AND CONSTRUCTION	MISCELLANEOUS
	-All rights and powers required by ordinances and licensee is bound to comply with any action of the city in exercising such rights, powers, etc. -May impose reasonable restrictions, conditions, limitations, etc., as to the area(s) to be served. -May grant other franchises. -May extend time for performance of any act to be done. -Review terms and provisions of licensee and impose reasonable restrictions and limitations to area(s) being served. -Purchase CATV at a fair value.		-120 days - installation shall be commenced. -Failure to do above will be grounds for termination. -Poles, cables, etc., in public places to be installed, shall be approved by the City Manager. -May install and erect facilities with City Manager's approval. -In areas where underground utilities exist, licensee shall construct likewise. -Construction of licensee's cables, etc., shall be subject to approval of Council in advance. -Discontinuance (12 mo.), termination, licensee shall remove all such property or poles. -Property remaining 30 days after termination, shall be considered permanently abandoned. -Director of Public Works shall prescribe any or all abandonment. -Licensee shall make any necessary changes as needed. -Failure of licensee to perform required work, City Manager may cause such work to be done at licensee's expense.	-All matters to be filed with City Clerk. -Licensee shall not engage in: 1. Selling TV or receivers which make use of signals transmitted by its system. 2. Repair of such receivers. 3. Sale or parts for the same. -No pay TV. -If PUC or FCC takes jurisdiction over rates and operating, authority of city shall cease. -Extend service to subscribers within area proposed if people want it.


STATE OF CALIFORNIA
INTEGRATED MICROWAVE SYSTEM
PUBLIC SAFETY SERVICES
LEGEND
CDF – CALIF. DIVISION OF FORESTRY
CDH – CALIF. DIVISION OF HIGHWAYS
OES – OFFICE OF EMERGENCY SERVICES
CHP – CALIF. HIGHWAY PATROL
DWR – CALIF. DEPT. OF WATER RESOURCES
○ – 12 GHz
● – 6 GHz
H● – 6 GHz HOT STAND BY
■ – 2 GHz
H■ – 2 GHz HOT STAND BY
▲ – SOLID STATE
△ – SOLID STATE (PROPOSED)
——— EXISTING
------- PROPOSED AS SHOWN
BEST COPY AVAILABLE
HAMAKER
SLATER BUTTE
CRESCENT CITY
GUNSIGHT
YREKA
RED MT.
ANTELOPE
MT. SHASTA (CITY)
MT. SHASTA
SODA RIDGE
ALTURAS
LIKELY
BIG VALLEY
BUNCHGRASS
SUGARLOAF
HOADLEY
SOUTH FORK
HORSE MT.
EUREKA
BURNEY
REDDING
FORTUNA
MT. PIERCE
SUSANVILLE
SHAFFER
TUSCAN BUTTE
MT. PRATT
RED BLUFF
HOUGH MT.
BLACK MT.
RED HILL
QUINCY
BECKWOURTH
CHICO
BLOOMER
MT. CAHTO
OROVILLE
SIERRAVILLE
DONNER
TRUCKEE
KINGVALE
BROCKWAY
LAUGHLIN RIDGE
MARYSVILLE
BANNER
CISCO BUTTE
WHITMORE
So. L. TAHOE
ECHO
SCOUT
COLDSPRINGS
UKIAH
LAKEPORT
WOLF
AUBURN
WOODFORDS
SEIGLER
BALD MT.
BIG HILL
TOPAZ
PINE GROVE
MT. ST. HELENA
WOODLAND
DANAHER
KYBURZ
CARSON PASS
SANTA ROSA
SACRAMENTO
PEDDLER HILL
MT. VACA
DRY HOOTS
MT. ZION
PETALUMA
NAPA
FAIRFIELD
VALLEJO
SAN ANDREAS
ALTAVILLE
TELEGRAPH
BRIDGEPORT
CONWAY SUMMIT
MT. TAMALPAIS
MT. DIABLO
STOCKTON
CRESTVIEW
SAN FRANCISCO
MODESTO
MT. BULLION
SHERWIN SUMMIT
SEE INSERT (1)
SAN JOSE CHP
SAN JOSE CDH
MT HAMILTON
LOMA PRIETA
MERCED
SILVER PK.
BISHOP
FELTON
MORGAN HILL
WADERA
POVERTY HILLS
SANTA CRUZ
FREMONT PK.
FRESNO
SANGER
INDEPENDENCE
COTTONWOOD
SALINAS
MONTEREY
EAST SIDE
VISALIA
BLUE RIDGE
JOAQUIN RIDGE
KING CITY
LEMOORE
LITTLE LAKE
CALANDRA
PORTERVILLE
PASO ROBLES
ROUND MT.
GOVERNMENT PK.
N
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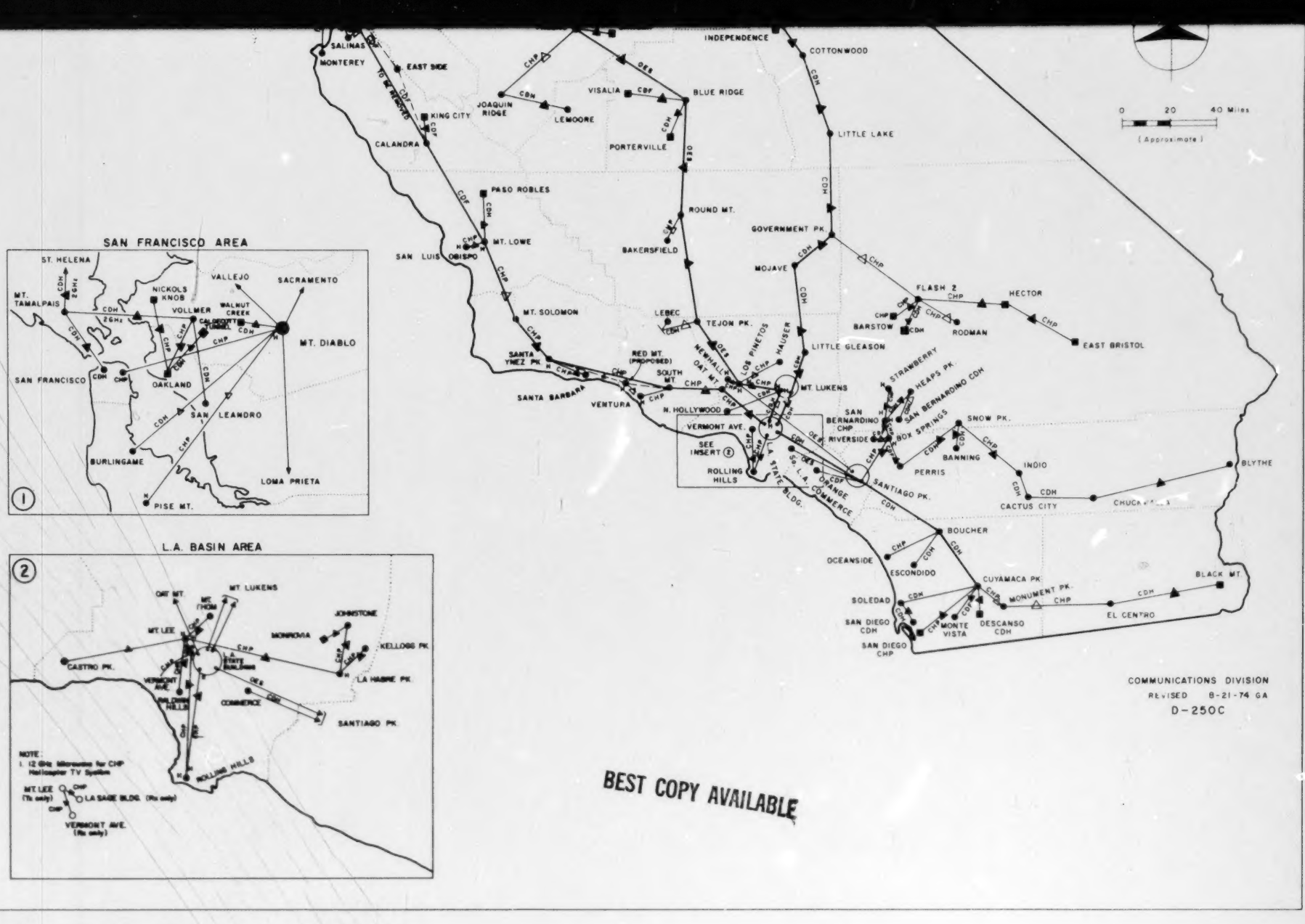
(Approximate)



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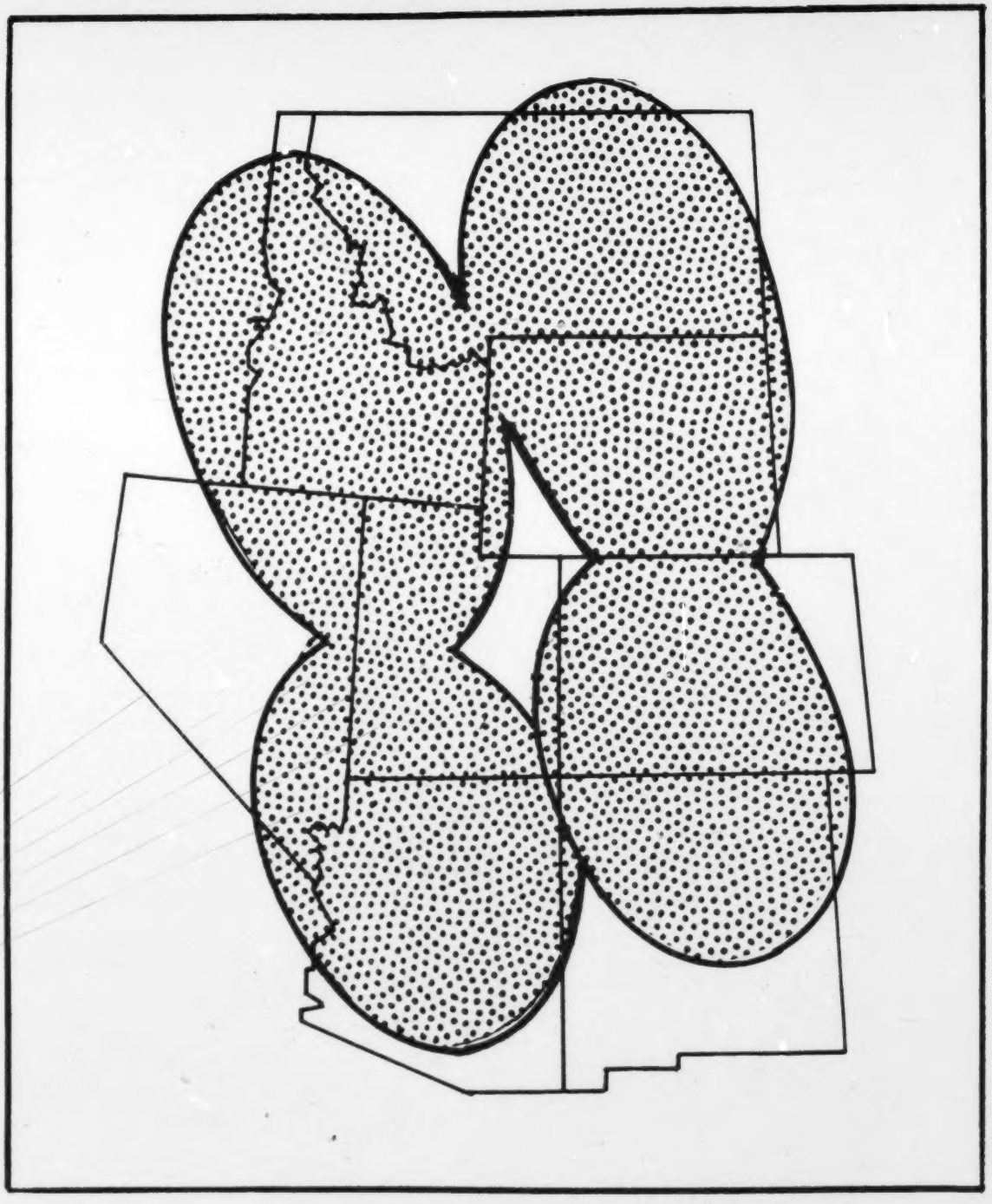

SATELLITE TECHNOLOGY DEMONSTRATION

Federation of Rocky Mountain States

BLUEPRINT FOR SURVEY OF GOVERNMENTAL AND COMMUNITY AGENCIES

Analysis and tabulation of information demands the use of a uniform approach to collecting that information. The following questions and statements should be used as a guide in interviews:

1. Full name of agency, its address, names of persons interviewed and date of interview.

2. In the briefest statement possible, what is the mission of the agency? Its purposes and services?

3. What is the constituency of the agency. How many are there? Where are they? Who are they?

4. Is the agency presently involved in any kind of program of public education, (not to be confused with public relations)? If so, a detailed description should be obtained, including samples of materials used.

5. If a public education program is underway, is there interest in changing or expanding it in any way? If so, what is the nature of the desired change?

6. If a public education program is not underway, is there any interest in undertaking such a program? What kind of program might be instituted?

7. Is there a need for professional in-service training programs for employees? What kind? How many employees involved? Anything being done now?

8. What distribution systems (open circuit television, CATV, radio, tape distribution library, other) would be most suitable to accomplish agency's public education work?

9. Would two-way capability of CATV provide any significant advantage over one-way service as provided by open circuit broadcasting?

10. What resources, if any, are available to carry forward a public education program? Are the ingredients of distribution systems, production facilities, personnel, financial support, presently available?

11. What resources would be needed to do a job at the beginning, average, and most desired level, including cost for both capital and operations?

12. What are the possibilities of cooperating with other agencies in carrying forward public education activities?

13. In the case of a non-state agency, what is the feeling regarding the State's role and responsibility for assistance in agency public education activities?

SURVEY CONTACTS AND SAMPLE

STATE AGENCIES

A. All Agencies, Departments as indicated, and as necessary, selected Divisions within Departments in Sacramento.

B. All General (E) Agencies in Sacramento.

C. Representative field offices of the above, but only if needed.

LOCAL GOVERNMENTAL UNITS

A. Each of the agencies as indicated in the cities and counties selected for survey. In larger communities it may be necessary to limit contacts to a representative group of those indicated.

SURVEY SAMPLE

A. A representative group of cities and counties is selected based on size, general character, and location in the state. The sample group is as follows:

CITY	COUNTY
Chico	Butte
Sacramento	Sacramento
San Francisco	San Francisco
Monterey	Monterey
Fresno	Fresno
San Bernardino	San Bernardino
Los Angeles	Los Angeles
San Diego	San Diego
Napa	Napa

STATE AGENCIES

A. BUSINESS AND TRANSPORTATION

Department of Transportation
Department of Alcoholic Beverage Control
Department of Housing and Community Development
Department of Motor Vehicles

B. RESOURCES

Air Resources Board
Department of Conservation
Department of Fish and Game
Department of Parks and Recreation
Department of Water Resources

C. HEALTH AND WELFARE

Department of Corrections
Department of Health
Department of Benefit Payments
Department of Youth Authority
Department of Employment Development
Department of Rehabilitation

D. AGRICULTURE AND SERVICES

Department of Food and Agriculture
Department of Consumer Affairs
State Personnel Board
Department of Veterans Affairs
Department of Commerce

E. GENERAL

Department of Justice
Health and Welfare Agency

E. GENERAL, Cont'd.

Office of Emergency Services
California Council on Criminal Justice
State Legislature
California Arts Commission
State Library
Department of Corrections

LOCAL GOVERNMENTAL UNITS

A. COUNTIES

County Supervisors
County Libraries
Agricultural Commissions
Consumer Protection Bureaus
Health Agencies
Welfare Departments

B. CITIES

City Councils
City Libraries
Recreation and Parks Departments
Planning Commissions
Chambers of Commerce

COMMUNITY AGENCIES

A. REGIONAL AND LOCAL

American Cancer Society
American Red Cross
California Association for the Retarded
California Childrens Lobby
California Council of the Blind
Family Service Agency
Human Relations Commissions
United Crusades
Medical Societies
Taxpayers Association
NAACP
Mexican-American
Environmental Associations
Councils of Churches
Youth Organizations

EXCERPTS FROM THE PUBLIC HEARINGS

The following statements have been excerpted from the testimony of over 100 participants in the Committee's eight public hearings.

The statements have been chosen because they convey the multi-faceted aspects of public telecommunications.

Eureka Public Hearing - October 10, 1973

I think that cable television and KEET-TV educational television has done a tremendous job without an enormous amount of funds. So I don't think there is any question about it. I think that any help from the State would be very, very important to the local situation. How that would work thrcugh the State I have no idea...Mayor Gilbert S. Trood.

In developing a telecommunications policy for California, every effort should be made to set up a "software" or program clearing house to avoid duplication of effort and said clearing house should be put under the watchful eye perhaps of the State Board of Education, which would be making multi-lateral decisions and not unilaterally. Administration of any such instructional television program might well be placed in the hands of the superintendent of education who would look, however, to the state board for policy guidelines.

California's future with public television appears increasingly bright because more and more citizens are recognizing that PTV and ITV are ideas whose time has arrived, and perhaps in combination with cities and counties, revenue-sharing dollars may soon find their way into county and city department budgets to be spent on public television stations to perform special and/or specific services to render both city and county government more effective to the people who pay for it...Donald Telford, KEET-TV, Eureka.

I now reemphasize a personal belief in support of good learning experience which would state the need for teacher-learner contact capability. Television presentations and television feedback, or in lieu of the latter, telephone feedback can replace the need for physical presence of teacher and student regularly. An occasional meeting of

student and teacher may well be needed. I hope the committee respects this need in its report...Donald F. Strahan, Humboldt State University.

Redding Public Hearing - October 31, 1973

There is a need to stress values to humanize education in a way we have not done before. But I really think the utilization of technology can go to that end -- can serve that need, and take us from just instruction, which may have a minimum of educational focus, to the human dimension, because what this will do will force professors, force instructors to confront -- maybe for the first time -- what the purposes and what the objectives are that they are about. Many of us just do without thinking about what it is we're supposed to be doing. And I think if you're going to put a course, or a part of a course, on tape for transmission, you've got to think about it. You've got to analyze it. I think the Carnegie Commission is quite correct when it says, and I underscore this; the new technology will also tend to draw instruction from historical requirements met through the teaching approach to a resource available for the learning approach. To underscore that again, the techniques for informational technology will influence instructional knowledge by making them more carefully thought out even if none of the new technology is used in a particular course. Most, or even all, instruction will become more analytic, more conscious about its methods, objectives and purposes. And I think if we address ourselves to that, then I think we can be turning out people who are more educated, more sensitive, more responsive human beings...Stanford Cazier, California State University, Chico.

The preparation of software which will meet the educational needs and improve the quality of life of the individuals who are both resident and non-resident students is a vast coordination and creation task. While a great deal of software for individualization or self-paced learning is available commercially, a system for dissemination needs to be developed. Cooperative creative effort among the institutions is workable. At present at Chico we are nearing the end of a project to offer a course in Art over TV where common input is on color tape while the modular laboratory content is agreed to among the institutions but is offered at each of the separate institutions. From the experiences of the ESEA Title III Federal projects, we have learned a "personalizing" occurs whenever a project is applied locally. What does it mean in this setting? The alternative methods of learning should be available holding the content constant. This committee could be helpful in establishing a kind of new role for faculty of all higher

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education institutions, a kind of learning resource faculty of designers of instruction, mediators of instruction, evaluators of instruction who could take the concerns of faculty and translate them into modules of learning acceptable to the credit-granting institution. This is not a formidable task, but it is a task of different skills from regular classroom teaching. A centralized laboratory for such development could be regional in nature. Our exploratory efforts with Davis for potential use of our facilities for their genetics course, our working with the Community Colleges Consortium to produce the art series are examples of that cooperative creation where appropriate commercial materials are not available. Such sharing of faculty, resources, and know-how should be routine but planned for and allowed for in budgets... Phyllis Bush, California State University, Chico.

I'll tell you that it is absolutely mindblowing to me when I think of the job that this station could be doing in this area. This is just a small example of what we should be doing, and that is covering a hearing like this. We should be up here covering the board of supervisors, we should have mobile units, and we should be on top of the type of coverage that I'm talking about. We should be producing in-depth programs, documentaries, on some of the problems we're going to be facing in our communities in the future. We should be providing a format for people who have local talent in the area -- cultural activities, and so forth. The list is really endless, and sometimes that's the most frustrating part of my job -- to know that we've got a new transmitter sitting up on the mountain and we have very, very little capacity to get out in the community and do the job I feel we should be doing. An example: Chico State is coming up with a new facility including a mobile unit in Redding, if we could obtain a mobile unit and work together with Chico, we could do a tremendous job covering the interior or Northern California. We are doing some local programming now but it's a very low budget. I'm not putting it down. We're doing the best we can, but we could be doing so much more for the people in our broadcast area in both ITV and the general educational area...William T. Reed, KIXE, Redding.

The only sorry aspect of our situation here in these rural counties is that so few small districts are financially able to take advantage of this excellent service. In behalf of these districts, I would ask this committee to use all possible influence to bring about an educational budget that will assist these districts in terms of initial outlay for instructional television...Pat Tallerico, Etna Elementary School.

San Diego Public Hearing - December 11-12, 1973

I think it is extremely important when we talk about telecommunications -- more specifically, broadcast television and radio -- and the idea of an open university, that we not forget that much of the most important education that takes place in America is not measured in terms of degrees, credits earned, or in grades achieved. Learning is not just to being able to do. It is also to know. Many, many people to whom we are responsible seek knowledge for its own sake, not just for vocational advancement, and one of the very best ways to reach them is through the telecommunications media. Unfortunately, only degrees and credit hours can be counted -- our budget is based upon meeting the needs of a certain number of full time equivalent students -- and as a consequence, as you well know, we get precious little support for our production and broadcast facilities. There is no easy way of assessing the knowledge which is or may be disseminated through the use of telecommunications and the idea of the open university, except to measure in generic terms the quality of the lives of the people who have free and open access to the world of knowledge through all modes of delivery of higher education. It seems to me that one of the responsibilities of the California Telecommunications Authority would be to devise ways of testing, if at all possible, this great intangible, perhaps by comparing the quality of life in California with almost any other political entity, which would be an interesting experiment, and to seek a more adequate base of financial support for organizations such as San Diego State, which is ready, willing, and quite able to continue developing telecommunications delivery systems for use in disseminating knowledge for credit and degrees, and of equal importance, simply for the enrichment within the lives of our citizens...Brage Golding, California State University, San Diego.

I am extremely pleased that your committee has come into being, and I am very, very encouraged by the resurgency of interest on the part of the state government in what has obviously become a burgeoning, but uncoordinated complex of (tele)communications activities. As you know, there have been spurts of interest in the past, and I am well aware of the continued supportive efforts of many of you in the Legislature, particularly in the area of instructional television. In spite of this, however, public broadcasting in California has developed in what could best be described as an atmosphere of benign neglect on the part of the state government. That it exists at all in some places is a tribute to the true believers, many of whom still must beg and borrow to meet the monthly payroll. Some, as you know, do enormously well in spite

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of their malnutrition, but most of them spend much too much time surviving, and too little time developing and producing valuable programs and services for the citizens of this state. I must admit that I have some difficulty in understanding why California, which prides itself in leadership in so many ways, lags so far behind such states as Nebraska, Mississippi, Ohio, New York, and others, in the direct support of public and educational telecommunications...Bradford B. Warner, KPBS, San Diego.

Public libraries and telecommunications have the following in common: both provide access to expensive information; both are community-oriented; both have an information function that spans the range of community, government, education, and human need services and activities; and both provide two-way communication. The public will have better access to more information if public libraries and telecommunications cooperate in providing information service.

Public libraries are already planning and providing library services through telecommunications. At least 97 American libraries are actively preparing to cablecast library services and more than 24 libraries are already serving the public by cable. For example, a public library in Ontario, Canada, had very popular cable television story hours. It also broadcast puppet shows, films and other children's programs. For adults, it provided lectures, discussions, book talks and reviews, and library reports to the community. The Mobile, Alabama, Public Library developed a program that enabled students to watch general education classes broadcast over cable TV in the library...Arthur Murray, San Diego County Library.

Burlingame Public Hearing - February 22, 1974

One final note, I am heartened when I think of the dilemma, we all understand so well, when I think of the talent we have throughout the state to create the educational materials we need. I know there are men and women in virtually every public and private institution of higher education in this state, who have the imagination, skills, training, and good sense required to bring educational excellence to telecommunications systems throughout California...Dr. Seymour Farber, University of California.

I think with the new communication technology potential, it's possible to drive down the unit cost of access to education in such a way that we can afford, as a society, to make this instructional educational opportunity available

to everyone in a way that isn't possible in a face-to-face tutoring situation. I think that by driving down the unit costs of instruction we will probably not save total budgets, but rather will make educational opportunity available much more widely. It's likely to cost more money, but be much more cost effective in reaching more people for the dollars that are spent. I think the potential of the communication technology satellites, cable TV, computers, videocassettes, won't be to reduce costs much within existing institutions, but rather allow us to extend the educational opportunities to the whole society...Edwin B. Parker, Stanford University.

The other question that I would like to discuss very briefly is the way that you can avoid centralized decision making, be it federal or state, as far as software is concerned. There are programs in many different subject areas throughout the country existing already and there are many more that can be done with reasonable resources. They are there now. I would certainly urge that if there is an effort made to expand in this area that the funding be more directed toward the user institutions rather than the producer institutions. These might in many cases be combined. Stanford produces textbooks and buys textbooks that MIT produces. But if the funding is going more towards the institutions within the communities that would make use of the video material, then the communities have the say as to what kind of materials they value. They are then making a decision on that basis rather than some committee much more divorced from the actual use of the material trying to make a decision as to what is most valuable.

I would say the second thing that is very important to assure that centralized control does not come, is to assure that there is equal access to the technical distribution systems, satellites if you will, so that any educational or private institution that has the money to pay for distribution can do so. The technology itself, the satellite, does not become a forum where some control agencies are set up to dictate what goes through it... Bruce Lusignan, Stanford University.

The state expends an immense amount of money for the education of California citizens between the ages of five and twenty-five; then, as though learning is a restricted function of the young, education is relegated to business-supported seminars and only minimal support is given to libraries and adult education programs, and these are frequently funded only on the local level. If the state will recognize the potential of cable television programming for public education and information, then I urge the

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state to also assume some of the responsibility to implement public, educational and governmental access programming. It is unreasonable and unrealistic to hope that the economically over-burdened cable systems will provide all the necessary production equipment and expertise for every local citizen, municipal agency and organization. Moreover, the recommendations of the recent "Whitehead Report" demands separation of cable systems and cable programming. Similarly, it is unrealistic to expect community organizations, municipal agencies, and educational institutions like libraries, which are struggling to maintain current services with an ever shrinking dollar base, to instigate cable services which need a sizable initial expense and suitable staff. I sincerely hope you will agree that cable communication should develop as an important public educational service, but I also urge you to guarantee its success with meaningful economic support...Roberto Esteves, San Francisco Public Library.

Anything that will prompt investigation and support into what I have come to view as the enormous potential of public television, and the new frontiers in instructional television, certainly is worthwhile. When we talk of instructional television now at KQED, we're beginning to talk less and less about the process of deliverying instruction to learning centers, and more and more about delivering instruction to homes and businesses, farms, and construction sites. These are the conversations we're having with people now. From industry, from education, and others. Because when we all started broadcasting all we had was the delivery system. It was the only way to get education where you wanted it, and it included, as you probably have heard, such wild schemes for delivering it through broadcasting as a strato cruiser with an antenna sticking out its belly flying over Pittsburg. Now, however, with CATV, with cassettes, with all the other methods of delivering -- and with great convenience -- instruction to learning centers, such as schools and so on, it seems that the edge we really have -- the potential that we really have that's so exciting -- is being able to deliver it to people outside of learning centers. That's the kind of thing that we're getting into. We are now talking about extending learning, professional teaching, aids to the business community, helping people understand, all kinds of things that help people live better, to understand how to live, to get along with one another, understand their environment, and so on...William Osterhaus, KQED, San Francisco.

This leads me to the basic philosophical point I would like to make here today. Public television -- and I use this term to cover all aspects of noncommercial television -- public television exists primarily for the purpose of serving local needs, local priorities, and local audiences. It is

true, absolutely true, that we would not survive very well without quality national programs. However, legislation at the state level ought to be concerned primarily with meeting local needs and then defining regional and state needs on the basis of similarly identified needs throughout the state...Maynard Orme, KTEH, San Jose.

Sacramento Public Hearing - March 15 and 29, 1974

One of the things that impressed us is that there appears to be a pretty high equipment and startup cost factor here, and the unit costs then are reduced fairly rapidly as you broaden the base of your audience. It appeared to us that perhaps the state might want to shift from the present system of funding on an on-going ADA basis, with the reimbursement formula that I have mentioned, and instead set up some kind of a fund that could be distributed to districts for start-up costs on a project basis to get over the hump of the start-up -- to get them in business. This would put them in a position where they could demonstrate the kind of results -- kind of economies -- that we think can be demonstrated, they might then be able and willing to build this into their on-going support costs. Once you get it going, it seems to us that the record shows, it isn't going to cost you money. It's going to do an effective job, and it's going to provide economies. That's the real hurdle -- one of the real hurdles -- has been the start-up cost of getting into business. Then, based on a track record, we can see what kind of subsidy, if any, might be needed to provide on-going programs that would be at least as economical as in the normal classroom situation. We can cross that bridge when we get to it, but the record looks pretty good that that would be the case. They have available to them, of course, not only their regular apportionments for this purpose, but we have also the free textbook program, or what we now call the "instructional materials fund," which provides $7 per ADA that might be used in part for this particular purpose.

In order to get away from the problem that I mentioned of duplication in programming and production, it seems to us that it might be feasible to set up some kind of a revolving fund that could be used to purchase nationally produced programs, and then the state, as the owner, could reproduce these and make them available on a sound economic basis to districts that they would pay for...A. Alan Post, California Legislature.

When we discuss the dramatic impact of TV based on solid research we use "Sesame Street" and the reading program, "The Electric Company," both of which are produced outside of the educational community. California needs a

well-planned dramatic curriculum effort to convince educators that TV can be an alternative to increased costs. The conventional approach for instruction no longer provides the type of instruction needed by our media oriented students. If TV is to succeed we must reorient our thinking from teaching to learning. And here I mean -- again -- paying attention to what the student needs rather than operating at the teaching level. If learning is the important part of our educational process, then television will prove itself -- not before...Charles J. Vento, Department of Education.

There's no question in my mind that television is a primary learning tool. It's a great device. All we're talking about now is the coordination of it. We have departments getting in their own way, and certainly not through any fault of their own, but simply because there wasn't any overall coordination. They were going to spend a great deal of money we felt very unwisely, and that's when we stepped in. The Governor very wisely got ahold of this issue, and has moved, through my department, to coordinate the activity, and I think save a great deal of money by the time we're through...Caspar W. Weinberger, Jr., Governor's Office.

What direction should California take in developing its Open University? An increasing number of states across the country have designed or have in varying stages of implementation their replicas of the "Open University," which is a British term, as you are aware, together with other kinds of media, rely to some extent on a statewide television network. Should California do likewise? In spite of the largest campus-based public higher education system in the world, there is evidence that we should. Let us remind ourselves that of the estimated eleven million adults actively engaged in educational pursuits in the state, only one-fifth or approximately two million adults can be accommodated by the existing campuses and off-campus learning facilities. An eleven million person learning force in the state is a potentially potent political force; we can foresee that the ultimate questions will not be whether these residents of California will be served the education they require, but how they will be served. We believe the answer will, in part at least, involve an expansion of educational television...Kenneth B. O'Brien, Jr., Coordinating Council on Higher Education.

We must invest in the possibilities. The return on this investment will be diverse. We may expect continued benefits from an increasingly educated citizenry. And there will be basic savings to them personally, as we discover in fact that it is cheaper to transport information than people. Out of this will come cumulative reduction

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in new facilities. In new roles faculties may even grow in size, but their functions will have increasingly diverse benefits far beyond their traditional academic roles. But much more subtly, major savings will result through technology from increased speed of learning, from increased flexibility of access to needed knowledge, and thus in far less costly transition to new social and economic roles. In brief, the payoff can be enormous...Stuart Cooney, Northern California ITV Consortium.

I think that 1970 really was some kind of watershed for higher education. It seemed to be a time when we began to realize that technology was available to do something different with instruction than we've been doing before. It seemed to be a time also when a number of national reviews of higher education wanted to change the method of delivery, taking into account the needs of many adults. Not only for continuing education, but for some kind of return to the completion of a degree that they had begun years before. It was also a time when we became much more aware that independent study is often as effective as organized classroom instruction. After all, most of us, after leaving institutions of higher learning, do engage in considerable independent study, and our experience with that is not only more dilatorious to our achievements than maybe organized campus instruction. So because of that, I think that the question of whether non-traditional teaching is valid has to be placed in context, and some new attention given to some methods that were really adopted and used considerably before 1970. So, if one considers non-traditional teaching, face-to-face teacher-to-student experience, any formalized classroom situation, perhaps with the use of published materials as additional learning sources, and then consider non-traditional as any variant of that pattern, there are evidences that learning has, does, and can occur as effectively in non-traditional teaching and learning as in traditional. And there is also considerable evidence that what we are now calling non-traditional teaching and learning, has occurred over the past decades without much attention being given to it. ..Durwood Long, University of California.

In looking at the overall picture of public broadcasting in the United States since the Carnegie Commission report in 1967, one is struck, on the one hand, by the dream and the vision, and, on the other hand, by the painful struggle to reach maturity. The eloquent language of the Carnegie Commission report and the subsequent enabling act establishing the Corporation for Public Broadcasting raised the hopes of many that a new era in non-commercial broadcasting had begun. The severe political battles in public broadcasting during the last two years indicate

that we have been overly optimistic in this experiment in institution building. The battles are not over by any means, but the picture in 1974 is much more hopeful than it was a year ago. A new partnership agreement between the Corporation for Public Broadcasting and the Public Broadcasting Service should permit greater participation by the local station leadership and contribute to the strength of the system. Further, a programming cooperative plan, soon to be implemented, should allay fears of over-centralization in program decision making. Finally, on the federal level, the prospect of long range financing looks brighter today than at any time in the recent past...Michael J. Nylan, Aspen Institute on Communications and Society.

Two more things that I'll end up with, and I think these are not really problems of cable, but these are problems of education, and I think you had testimony about them, so I'll just mention them briefly. It's been talked about by people who really know more about it than I, and that is really the lack of software. There is a lack of something to put on those systems, and when it comes down to that, it really doesn't matter whether cable or commercial television stations, or public television stations, the distribution media are there. Cable is going to provide more, although it will be a slower process than we had hoped a few years ago. But I think that the fundamental problem is, where are the funds going to come from, where will the expertise come from, to produce the programs? And, I think, once that problem is solved, then the problem getting them out to the people will be easier to deal with...Richard Adler, Aspen Institute on Communications and Society.

Los Angeles Public Hearing - April 9, 1974

If we are to be successful in California in realizing the potential that exists in a technology which Professor S. I. Hayakawa has described as a revolutionary instrument more powerful than Marxist ideology, much more will be needed than the piecemeal efforts by struggling institutions in scattered districts throughout the state. Unless massive state support and commitment can be marshalled, we are doomed to a paltry effort. We may see our monumental structures, our thousands of classrooms, our farflung campuses largely uninhabited and unused if we continue the mismatch which exists between our sources of power and our use of power. The citizen today is avid for education but he wants it on his terms and in his way, and he is living in the Twentieth Century world. If the educator persists in living in a world dominated by the movable type of Gutenberg and the Medieval rites of the pendant, we may find indeed that the ivory tower is a lonely spot...Norman E. Watson, Coast Community College District.

I think really that the combination of satellite technology and cable technology will provide a new level of choice. A person will be able to select from three or four or five choices. In fact, they will be able to select from twenty, or thirty or forty choices. Now, for some that might be frustrating, but for others that might be quite an exhilarating opportunity to select between a ballet or a play. And there's nothing right or wrong about the selection process. The technology should be providing, in the video sense, the same kind of choice which we have in the magazine sense and the library sense. We have a great number of choices in the bookstore we can read. We do not have that selection in video at the present time...Paul Visher, Space Communication Group, Hughes Aircraft Company.

Now, for a few observations based upon more than twenty years in this business and ten years at KCET, about what is necessary for maturity of educational and public television within the State of California. In 1973 the Association of California Public Television Stations outlined what it felt its member's priorities would be in order to insure an orderly growth and development in providing service to the citizens of the state. First would be the establishment of a statutory agency to encourage the orderly and reasonable development of public broadcasting within the State of California. Second, the establishment, development and operation within the state, of a public television inter-connection system linking together all of the stations. Third, the providing of grants to public television stations serving California to aid in the improvement of broadcasting operations, programming and capital facilities. Fourth, the examination of the total available television delivery resources, including broadcasting stations, cable systems, translators, satellites, or other forms of new technology toward the end of extending noncommercial television service to the largest possible number of California citizens. Fifth, the coordination of needs and resources on all four major levels of education within the state toward utilizing fully the medium of television in the instructional process...James L. Loper, KCET, Los Angeles.

A couple of things have been mentioned that I want to reiterate. One of them is that the Farr-Quimby Act has been most effective in helping us interest and keep school districts involved with television. Another aspect beyond that is the idea of making a certain amount available, not on a matching basis. Many school districts did say, when they dropped out of being involved in a regional television project, that it was not because they were not interested in television and didn't feel it was valuable,

but when cuts began to come it was easy to say, "Well, here's something that we can cut." Many of those districts are still using television but not paying their share, because the teachers are so used to using it. As one principal said to me, "Why should I stop using television just because my district won't pay into the regional organization again?" He said, "I'm interested in my students and my school. I want to make this available."...Elinor Richardson, KLCS, Los Angeles.

Visalia Public Hearing - April 19, 1974

There should not be any fear at all of a state network. That has to be the single highest interest expressed by all the stations everywhere we've talked. They wanted an interconnected network that would link them, that could not only be used for instructional programming, but during the off hours of the net could be used to feed news; it could be used to feed technical information. The stations are vitally concerned with communicating with each other, and that is the reason -- one of the major reasons that my organization -- the organization I represent -- exists. Steven Ruegnitz, KCPR-RADIO, San Luis Obispo.

This brings me to another point I was going to make and it's a very serious problem. There is currently at least to my knowledge, no central clearing house of information concerning available courses, and the result of that each new consortium, and ours was no exception, was forced to seek its own sources of information. I mentioned I was on the telephone. I spent literally hours on the telephone calling different community college television consortia in California -- in other states in the United States -- to find out problems they had encountered, how they obtained the courses that they were offering. I noticed that both bills, in fact, AB 493 and 494, do provide, with the proposed California Television Communications Authority, a means for disseminating information about telecommunications, and I think that would be a great step forward. It certainly would have helped us two years ago if it had existed.

Another problem we faced is that concerning broadcast time. We've been forced to use commercial television channels, which means that our courses are usually broadcast between 6 and 6:30, or 6:30 and 7 a.m. -- not exactly a prime time. In spite of that, last semester we offered a course from 6 to 6:30 a.m., we had 800 students enrolled, and if we could offer courses at say midmorning or midafternoon, I am sure we could double or triple the number of people who could enroll in courses...Lincoln Hall, College of the Sequoias.

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San Bernardino Public Hearing - May 17, 1974

Initial discussions with other institutions of higher education in our community indicate strong need to develop the potential of our broadcast, educational media to bring the resources of our local educational institutions directly to the homes of the people in our community. As our Valley College Dean of Instruction Dr. William Moore characterizes it, we envision the "vertical" consortium approach. That is, utilizing our district's public radio and television stations as a common ground to reach all of the citizens in our community, we propose to continue our commitment to elementary and secondary classroom broadcast instruction working directly with our colleagues in ITAC...to continue our own community college lower-division credit courses for students of our own campuses at San Bernardino Valley College and Crafton Hills College, plus those of our community college associates at other districts in our service area who choose to join with us...to continue providing cooperative service with the University of California at Riverside and the University Extension...to continue to develop upper-division college-credit courses with the California State College at San Bernardino...to extend our educational broadcasting service to all other educational institutions in our community who are willing to make the commitment to our citizens that we have been making in public radio and television for the past two decades. That is, to utilize, at reasonable cost-effectiveness, the educational resources that our district has established under federal mandate to operate a public radio and public television station in the full and literal sense of the nation's public policy toward all of broadcasting -- the bedrock of our commitment to operate KVCR-TV and KVCR-FM -- The Public Interest...Convenience...and Necessity. Raymond F. Ellerman, San Bernardino Community College District.

Exhibit 16

Sacramento Address:
State Capitol
95814
(916) 445-0870

District Office Address:
161 W. 25th Avenue, Suite 101
Post Office Box 906
San Mateo, California 94403
(415) 574-1970

Senator
Arlen Gregorio
Twelfth District
San Mateo County

Committees
Local Government
Vice Chairman
Education
Health and Welfare
Natural Resources
and Wildlife

December 18, 1974

Joint Committee on Telecommunications
1116 - 9th Street, Room 58
Sacramento, California 95814

ATTENTION: Mr. John Crabbe

Gentlemen:

I regret that I cannot endorse the findings of the report of the Joint Committee on Telecommunications.

Briefly stated, my objections are that the report fails to examine and detail adequately the current technical expertise and legal authority of local government to be involved in CATV franchise, and that it omits a philosophical consideration of what state involvement would be beneficial and a practical consideration of how the state could fit into existing local and Federal regulations patterns without duplicating them.

Very truly yours,

AG/mp

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